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THE RUSSIAN GLORY

THE RUSSIAN GLORY

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"Europe knows this nation only through
its struggle, from which it has emerged
victorious!"

ALEXANDER HERTZEN, 1851

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CHAPTER I

THE END ?

The shortest night of the year, the night of June 21st, spread its wings over our land. Apple trees were in blossom in the neighbourhood of Moscow, and ears of rye were beginning to form. Children were smiling in their cradles as the early dawn announced the new day.

The world around us was wrapped in flames. The British had just taken Damascus. The Germans were besieging Tobruk. The Japanese were bombing Chengtu. The Italians were still offering resistance at Gondar. Rotating at furious speed, our globe was veritably like a smoking shell just about to explode.

We were not at war; we were hard at work. The fourth year of the Third Five-Year Plan was under way. A job requiring Herculean labour had devolved upon the present generation; we had to make up for centuries of lost opportunity and carry our vast country forward, beyond even memories of her recent backwardness.

But Russia lay in the way of German fascism's course toward world domination.

It was during these fateful days that Soviet archæologists opened the tomb of Tamerlane in Samarkand. For five centuries the ribbed turquoise cupola of the Gur-Emir Mausoleum had sheltered undisturbed the remains of this man who drenched in blood a world "too small to have two emperors." The three-ton lid of the tomb strained heavily against the pulleys. At the bottom of the marble sarcophagus lay a skeleton shrouded in what had once been priceless brocade, now nothing but rotten rags and tatters. One leg was shorter than the other. The skull was scarred by damp and tufts of hair were still visible on the mouldering crown of the head.

With the Russians unsubjugated Hitler could not hope to gain world domination. And so in the small hours of the morning of June 22nd, 1941, at the time of the summer solstice, our children were awakened by the ominous march of war. The most powerful army in the world suddenly burst in upon our peaceful land.

Arrant treachery ? It is hard to argue about morals and ethics when two hundred divisions, armed to the teeth with all the paraphernalia of modern war, have descended upon your country, spreading death and destruction far and wide.

The German army was fully mobilized and conveniently disposed. It outnumbered ours in tanks and aircraft, in mortars and automatic

firearms. Two years of hilarious warfare in the West had been good training for the German troops. It had given them the impetus born of success, and imbued them with an exaggerated faith in their own invincibility. Suddenness of attack—particularly advantageous in high-speed modern warfare—made it easy for the Germans to attain numerical superiority wherever they so desired. A sweeping attack with terrific punch was launched with lightning speed along the vast front extending from the Black to the Barents Sea.

The Soviet Union was struck a staggering blow, the most powerful ever dealt any country by any foe.

Motorcyclists in great numbers raced forward at top speed, their tommy guns blazing away furiously. Thousands of tanks rolled on, crushing everything in their path. Into the breach poured a torrent of motorized infantry. Aircraft rained bombs on trenches, highways and cities. An avalanche of blood, horror and death swooped down upon the country along a front 2,000 miles in length.

June 23rd marked the first day of Soviet mobilization. The huge distances that must be covered in the U.S.S.R. and its none too dense network of railways retarded the concentration of forces.

During the first few hours of fighting it was the Soviet border guards who countered the onslaught of the steel armada. They met the Germans with rifle and machine-gun fire, and then engaged them in hand-to-hand fighting. They stood to the death.

In the afternoon of the first day of war the German army clashed with the field units of the Red Army. The greatest battle in history had begun, on the Russian plains.

Its initial stage was unpropitious for our country. The odds seemed to favour the Germans, they were numerically superior in arms and men, and had far greater experience as well. The Red Army was forced to retreat. It inflicted heavy losses on the enemy, but none the less it was retreating. This was a "lion's retreat," in line with a strategy dictated both by far-reaching plans and immediate necessity.

On July 3rd Stalin spoke over the radio. He did not mince his words, admitting frankly: "Grave danger threatens our country. . . . The issue is one of life and death. . . ."

The German armoured groups operated on the central sector of the front. Both were driving forward towards Minsk; the one through Vilnius, the other *via* Brest-Litovsk. Grodno, Brest, Vilnius and Kaunas fell during the first few days of the war and forward German tank units appeared near Minsk soon after. By July the battle-front had reached the banks of the Berezina. Early the next month the enemy took Smolensk. At one time this town was called the "key to Russia." The Nazis had covered two-thirds of the way to Moscow.

Having crossed the Western Dvina in savage fighting, the Germans also started to drive North. They were heading for Leningrad. One of their tank groups aimed at forcing the defences of the city by a precipitous dash along the Luga highway, while another aimed at isolating the northern metropolis from the rest of the country by striking at Novgorod. Novgorod fell and shortly afterwards the Germans cut the Moscow-Leningrad railway. Their advance continued until they reached the very outskirts of Leningrad. Then they laid siege to the city, their forward trenches passing clear through its southern suburbs.

The Germans also advanced in the South where they had concentrated a vast number of tanks and huge aircraft formations. The war was only a few days old when we were compelled to abandon Lvov. August witnessed the fall of Nikolayev, Krivoi Rog and Dniepropetrovsk. In September the Germans capture Kiev after prolonged and bloody battles. A grim autumn followed: Odessa, Poltava, Kharkov, Mariupol—almost the entire Ukraine was overrun. In the extreme South the Germans drove through Rostov, thus seizing the gateway to the Caucasus, the grain of Kuban, and the oil of Baku. . . .

"The entire Soviet air force is destroyed. . . ."

"The Russian command has thrown its last reserves into the fray. . . ."

"The Soviet front has been breached on all vital sectors. . . ."

"The Soviet troops are incapable of further resistance. . . ."

"The Russians do not realize that they are beaten. . . ."

The big gaps in the front gave the German troops tremendous advantages. The enemy threatened to disrupt the strategic deployment of our forces, to split up our front and separate our armies. They were in a position to strike flanking blows, surround our troops and at the same time continue and broaden their main drive to the East.

The main drive on Moscow was slowed down in August and September. The German army grouping in the central sector was stopped and held east of Smolensk. Then, in coordination with the southern group, it launched out in a south-easterly direction and struck at Orel. In October, after mustering their forces, the Germans broke through our front on the central sector, in the district of Vyazma. This necessitated the withdrawal of the Red Army from the Bryansk area and made it possible for the Germans to begin their drive on Moscow.

The fall of Mozhaisk brought the enemy within 70 miles of the capital. He then pressed on to Zvenigorod, cutting the distance in half. The Germans were out to grip Moscow in pincers, with jaws

closing North and South. Fifty German divisions took part in the drive on the capital. The vast bulk of the *Wehrmacht* panzers were massed here for the expected kill. Moscow was gripped in a semi-circle which was being drawn tighter and tighter. Hitler was gripping Moscow by the throat.

* * *

The end seemed very near—the end of a thousand years of Russian history, the end of the genius and independence of the Russian people one hundred million strong—the end of everything Russian. A cruel and inexorable force was wresting the country from its people. Memories of ancient glory would be obliterated and hope for the future stamped out. Russia would be no more. You and your children and millions like you would be sacrificed.

It was a ghastly, terrible time. We kept up the fight, striving to stem the avalanche of death. And in our concern for the future we Russians recalled our past, the most horrible pages of our history.

* * *

Germans and Russians. . . . The people of Goethe and the people of Tolstoy, almost equal in numbers, almost neighbours. The differences in their mental make-up and in their economic resources might have served as a basis for close and fruitful collaboration. But all too frequently has the wise policy of friendship been frustrated by unreasoning antagonism, and the consequences have been tragic. The Russian people are not to blame for this. The Russians bear no preconceived malice towards other races and peoples. But among the Germans there have always been a substantial number who advocated aggrandisement at the expense of the Russians—the “*Drang nach Osten*” has become a national principle.

A thousand years ago the trouble arose out of what seemed to be mutually profitable commerce. The Germans were expanding eastward, annihilating, expelling and suppressing neighbouring tribes. By the middle of the twelfth century their ships, only merchantmen as yet, had reached the eastern shores of the Baltic.

The Livs and the Ests inhabiting these Baltic regions were vassals of Russian Polotsk and Russian Novgorod. The guileless Prince of Polotsk permitted the Germans to build a church at the estuary of the Western Dvina—an outlet to the Baltic of no less importance to Rus

than that provided by the Neva. The Germans built the church, and also a fortress. Thus, this Russian outlet to Europe was soon blocked, and trade monopolized. The Germans had gained a foothold for aggression in the eastern Baltic lands, for the methodical annexation that has become so familiar to us.

Much the worse for their reverses in their crusades in the Holy Land, the German knights of those days were on the lookout for easy pickings. The German barons sought new fiefs and docile serfs, while the German merchants coveted the wealth of Northern Rus and the prospect of lucrative trade.

The Knights of the Order of Sword Bearers, clad in armour from head to foot, equipped with heavy shields and bearing the emblem of the cross and sword on their white mantles, subdued the Livs and Ests by a policy of ruthlessness. The castles built by the Germans in the newly-conquered lands enabled them to keep the enslaved peoples in subjection. By instigating inter-tribal feuds they undermined resistance. Their shields and mail were arrow-proof, and their powerful catapults decimated the bowmen. Thus the Livs and Ests became the bondsmen of the Germans.

The Baltic was occupied and Russian influence eliminated in this region. The Germans continued their eastward drive until they reached Rus proper. Novgorod and Pskov, the north-western bulwarks of ancient Rus, were threatened by these encroachments.

The Russians and Germans had already clashed in the Baltic regions, where Russian contingents aided the Livs and Ests in their stand against the common foe. But the struggle became intense only now, when Rus herself was threatened.

"Seigneur Great Novgorod," and its "smaller brother," Pskov, as these towns are styled in ancient chronicles, were among the oldest towns of Rus. Here, among the northern rivers and forests, a peculiar type of city republic had arisen. Novgorod ranked among the richest of commercial communities of those days—a Venice or a Genoa of the North.

Here the artisan and the builder found full scope for their talents. The walls of the cathedrals were decorated with splendid frescoes, executed by Byzantine artists who preserved the finest traditions of the culture of ancient Greece. Literature flourished, as exemplified by "The Lay of Prince Igor" and many translations of the classics. The heroic Russian epic took its origin here.

The sword of the enemy was raised to strike at the heart of Rus.

In those days Rus was not a single state. She was split up into a great number of independent principalities. Only unity could save Rus from her powerful enemy.

In the year 1240 the German knights stormed Izborsk, a fortified outpost of Pskov. All Pskov took up arms and hastened to the aid of Izborsk, but the Germans drove an iron wedge of mailed knights into the Russian ranks and put them to flight. Soon Pskov itself was surrounded.

There began the siege of Pskov, now weakened and abandoned to its own devices.

As the days wore on, it became clear that the Germans were not strong enough to take the city by force of arms. But they were at no loss for other means. The settlements outside the walls of the Pskov Kremlin were razed to the ground. But Pskov was not cowed.

Captured children were brought to the walls and the Germans threatened to kill them before the eyes of their parents, but Pskov refused to yield.

Then the Germans offered the governorship of the town to a Boyar named Tverdilo, and the traitor opened the city's gates. . . .

This was no flying raid; the Germans settled permanently on the conquered land. They were gathering their forces for the next leap. All they had to do now to subjugate Northern Rus was to capture Novgorod. On a steep and rocky eminence, on Novgorod territory, the knights built the fortress of Koporye, a convenient jumping-off ground for the final blow. The Germans controlled the entire territory from Pskov to Novgorod. Roads were laid, villages devastated, homes pillaged, cattle driven off and many Russians slaughtered. Advance detachments of the German knights began to prowl in the neighbourhood of Novgorod.

A broadly conceived plan was now put into effect by the invaders. Religious prejudice was enlisted as an ally. The Russians were not pagans; but neither were they Catholics. Hence, the invasion was proclaimed a united "holy crusade." The German knights were joined by the Swedes. Birger, brother-in-law of the Swedish king and founder of Stockholm, entered the Neva estuary in 1240 intent on striking at Novgorod from the North simultaneously with the German attack from the West.

In those days knights still followed the custom of "declaring war." Birger dispatched an epistle to the Prince of Novgorod, stating: "Defend yourself as best you can; I have arrived and am seizing your lands." An arrogant but well-founded confidence in victory. A specific agreement dividing the Russian lands between the lords temporal and the lords spiritual had already been drawn up. The moment for attack was well chosen—how could Novgorod stand up

alone at a time when Central and Southern Rus were being trampled underfoot by the Tatars? The fate of Rus seemed to hang by a thread. It was the year 1240.

* * *

Fearsome times. The Russian state was only in the process of formation and yet it was already shaken by violent storms. The Russian people, not yet fully united as a nation, were threatened with the loss of their independence.

Rus lay along the line where Europe borders on Asia and even in its nascent state it was the victim of simultaneous attack from both these quarters. The Germans were pressing on to Russian soil from the West, while from the East she was overrun by the Mongol-Tatar hordes.

Genghis Khan, the cruel builder of the vast Mongol empire, was storming through Central Asia. His savage warriors, driving further, ripped gaping wounds in the body of unfortunate Rus. In 1224 advance units of Genghis Khan's hordes routed a Russian force in the Black Sea steppes, and pushed it back to the Dnieper. The victory feast was served on boards beneath which were crushed the bodies of captive Russian princes. . . . In 1237, the year of the Papal bull proclaiming the crusade of the Germans and the Swedes against the Russians, Genghis Khan's grandson Batu swooped down upon the Eastern borders of Rus with an army of 500,000 Tatar horsemen whose swift steeds had raw backs under every saddle, black helmets, flashing scimitars, hooked spears, and well-filled quivers. Batu was out to conquer the earth—"as far to the West as the hoofs of Mongolian horses can carry him." As usual, the conquerors were aided in their progress not only by their superior forces but also by the legend of invincibility that had been woven around them, by stirring up discord in the camp of their adversaries, and by their own acts of perfidy and deliberate brutality. "The earth groaned under the multitude of warriors, and the clamour of the troops maddened the wild beasts and the birds of the night. . . ."

The strength of feudal Rus was sapped by internecine strife among rival princes. One by one Batu reduced Ryazan, Vladimir, Moscow and finally Kiev.

The Russians fought desperately. Even small towns with no other defence than wooden palisades did not surrender to the hated invader, who had taken without a stroke such large and strongly-fortified cities as Bokhara and Merv. But all opposition was in vain; Rus fell bleeding into Tatar bondage.

Towns were sacked and destroyed, many completely obliterated, never to rise again. Villages were turned into ash heaps. Farmlands became overgrown with weeds, and human bones rotted in the grass. The population was largely exterminated or carried off to be sold into slavery. Unbearable tribute was levied on the survivors, tribute exacted with such inhuman brutality that "the living envied the peace of the dead. . . ."

Drop by drop the Golden Horde drained away the lifeblood of Rus. The country was being devastated, but worse still was the blow to the morale of the Russian people. Plants crushed by rocks cannot blossom.

Tatar bondage overhung Rus through the decades. She seemed fated to perish in utter hopelessness, in devastating humiliation.

Still, when Mamai seized the Tatar throne, Rus was yet alive. Then the huge hordes of Mamai sallied forth to deal her the final blow. Thus came the year 1380.

* * *

Danger threatened from the West, from the East, and again from the West.

At the end of the sixteenth century Rus was exhausted by the protracted Livonian wars. The yoke of serfdom was growing heavier, embittering the people, and the country was shaken by peasant uprisings. The boyars were warring actively against the idea of a strong central government, of a powerful, unified state. Ivan the Terrible was succeeded on the throne by his feeble-minded son Theodore, who soon afterwards died. Dmitri, another son of Ivan, died under mysterious circumstances while still young. The dynasty became extinct. A scramble for the throne broke out among the Boyars. Intrigue, murder and execution were rife. Troublous times set in for Rus.

Then came the crop failures that ushered in the seventeenth century. Due to excessive summer rains and early frosts, the crops perished year after year. Famine stalked the villages and towns. Epidemics carried off thousands upon thousands of victims.

The sceptre of state was in the feverish grasp of Tsar Boris Godunov. The Boyars considered him a usurper and the peasants blamed him for their impoverishment. When the storm broke, Boris was unable to preserve the country's territorial integrity and political independence.

Rumour spread that Prince Dmitri had not been killed but had made good his escape. A false pretender to the throne now appeared in Poland; this "False Dmitri" enjoyed the support of Sigismund, the King of Poland.

In 1604 the army of the False Dmitri crossed the Dnieper. It consisted of Russian Cossacks and Polish volunteers. Towns submitted to "Ivan's son" almost without resistance; military leaders turned traitor to Boris, whom they hated and despised. In the villages, the peasants, hoping for better times, welcomed "Ivan's son" with the traditional bread and salt.

Then followed Boris' sudden death. His son was strangled. The treachery of the upper nobility and the unsuspecting faith of the people brought the False Dmitri to the throne. To the ecstatic ringing of bells the new tsar rode into Moscow on a splendid steed and dressed in raiment of gold. He was preceded into the city by troops of Polish cavalry in iron helmets with blue capes over their coats of mail. They carried broad swords at their belts and muskets in their hands, while the lances at their saddle bows trailed along the ground.

The new tsar fancied foreign dress, and foreign advisers were always at his side. He promised Smolensk to Sigismund, and promised the Pope that he would introduce Catholicism into the country. The treasury was being rapidly depleted. The tsar's bride, Marina Mniszek, was presented with a keg of pearls, King Sigismund with an elephant cast in gold.

Moscow bore all this for a year, but then rose up in arms. The impostor was killed, his body tarred and burned, and the ashes fired from a cannon.

A year later a new army marched on Moscow, led by a second False Dmitri. Again foreign soldiery swarmed over tormented Russia.

When Sigismund felt that Russia had been weakened sufficiently he acted in the open. He invaded the country and laid siege to Smolensk. His advance column, consisting partly of Poles and partly of German mercenaries, routed the Russian troops on the road to Moscow and reached the walls of the capital.

Moscow was convulsed with dissension and treason. In an attempt to save themselves from annihilation the Boyars invited the Polish prince Wladislaw to ascend the throne. One dark autumn night they treacherously opened the city's gates to admit the enemy troops.

The Poles seized the treasury and the court. Royal crowns, the royal staff studded with precious stones, and costly royal garments went to pay the salaries of the officers.

Sabres, axes and knives were requisitioned from the Muscovites. It was forbidden even to bring firewood into the city, for fear it might be used for making arms. But despite these precautions the people rebelled. There was fierce fighting in the streets. Moscow, in flames

for three days, was reduced to ashes. Many people were killed, much property pillaged. Drunk with victory and loot, the *Landsknechte* began loading their muskets with pearls instead of bullets.

Moscow lay prostrate and bleeding from many wounds, and still bad tidings kept pouring in from every part of the land.

Bad tidings from the West: After a year and a half of siege Smolensk succumbed to the enemy. The last defenders blew up the remnants of powder and were killed in the explosion. One of the strongest fortresses of those days fell into the hands of the Poles. Endless festivities in Cracow and in Rome greeted this victory.

Bad tidings from the North: Taking advantage of Russia's plight, the King of Sweden blocked her outlet to the Baltic by force of arms. The fortress of Korela surrendered, only one hundred of its original garrison of 3,000 surviving. Novgorod too seemed lost to Moscow.

Bad tidings from the South: The Nogai Tatars were devastating the Russian steppes.

Bad news everywhere. Had Russia's sun set for ever? Had her people lost their spirit? Bands of robbers and cut-throats infested the land. New pretenders appeared, now here, now there. Deprived of shelter, people froze on the highways. Town dwellers fled to the forests while forest beasts invaded the towns.

Russia was greatly depopulated. Disease and famine and the law of the sword took their toll.

Russia no longer had a government, a treasury or troops. The country was breaking up. Its death agony seemed near. The year was 1612.

* * *

The Russians had disputes of long standing with the Swedes. During the "Time of Troubles" Sweden wrested the Baltic coast from the weakened hands of Russia, blocking her outlet to Europe. The country was bottled up. It was an "island" surrounded by land.

Peter the Great tried to break through to the Black Sea but failed. Turkey, forced to fall back, yielded the Azov coast but held on round the Black Sea. The only way out was to knock the lock off the gates to the West and break through to the Baltic. The day after the armistice with Turkey was signed Peter turned his armies against Sweden.

Almost a hundred years had gone by since the Russians lost their cities on the Gulf of Finland. Gone also was the ~~seventeenth~~ century, during which Sweden had reached the apex of her power.

The Thirty Years War had ended in the defeat of Germany and the aggrandizement of Sweden. With the decline of the Hanseatic League, Swedish trade flourished and expanded. Swedish iron conquered all markets. The Baltic Sea became a Swedish lake. The great military reformer, King Gustavus Adolphus, made Sweden the model state of her day—her tactics were copied, her system imitated, her power feared. Swedish captains grew accustomed to the sycophantic submissiveness of burghers who sent them the keys to their cities long before the invading armies reached them. And yet in 1700 Russia, leagued with Denmark and Poland, embarked upon war against Sweden.

Peter's army marched up to the gulf of Finland. The fate of Russia hung in the balance—she must either break through to the open sea and become a European power or be reduced to a province of Greater Sweden and become a political nonentity.

The Russians deliberately accepted the risk, while the Swedes exulted beforehand at the prospect of adding another victory to their long list of triumphs on the battlefield.

Peter laid siege to Narva, the Swedish fortress barring his way to the Gulf. Only a small part of the Russian army had been properly trained. There was a dearth of officers, and its equipment and supplies were held up by the autumn mud. Its powder was of inferior quality, and soon the Russian bombardment ceased, having produced no perceptible results.

In the meantime, 18-year-old Charles XII, the gifted and courageous King of Sweden, made a surprise landing in Denmark and swiftly defeated her army. The King of Denmark sued for peace. One of Peter's two allies was now out of the fight.

After finishing with Denmark, Charles proceeded at once to Narva. The Russians were vastly superior in number to the Swedes. Nevertheless, the Swedes attacked, taking advantage of the fact that a blizzard was raging and that the wind was against the Russians, who could not see for the blinding snow. The untrained Russian troops, officered largely by foreigners, were unable to withstand the furious charge. They fled, whilst the foreign officers surrendered. All the artillery was lost.

Next Charles turned on the Poles, defeated their army and dethroned their king. Peter's second ally was out of the fight.

Russia stood alone. Soon the invincible Charles again appeared on her western borders, his hands now free to deliver to Peter the *coup de grâce*.

The Swedes took Grodno, defeated the Russians at Golovchino and crossed the Dnieper. The Ukrainian Hetman Mazeppa turned

traitor and sided with Charles. The strongest army of Europe, an army that had never known defeat, took the field against the Russians. The year was 1709.

* * *

Time and again, as if by some whim of fate, the turn of the century brought mortal danger to Russia. The advent of the seventeenth century saw the coming of the Time of Troubles, while the first years of the eighteenth century witnessed the clash with Sweden. Came the nineteenth century and again a powerful blow brought Russia to the brink of the abyss.

At first defeat came to the Russians while they fought on foreign soil—in 1805 the French routed them at Austerlitz and in 1807 at Friedland. Frightened, Tsar Alexander I concluded the shameful Peace of Tilsit, by which he became the ally of France and severed relations with England. The short-lived pact was sealed with fervent embraces.

It was soon after Tilsit that Napoleon declared: "Now I can do anything!" Indeed, not only had Russia been divorced from the England he hated so dearly, but she even aided him in maintaining the continental blockade. Napoleon held sway over almost all of continental Europe—only England stood between him and world domination. Napoleon was at the zenith of his reign: He was Emperor of France, King of Italy, Protector of the Confederation of the Rhine, was the power behind the throne of the "independent" Grand Duchy of Warsaw, and dictator over docile Prussia and Austria. Besides, two of his brothers sat on the thrones of Holland and Westphalia. The vassal lords of Europe awaited his orders with bared heads. At his second marriage in Notre Dame five queens carried the train of Marie Louise's dress.

But still Napoleon dared not cross the Channel. He must first conquer Russia, turn her into a French colony and utilize her for the conquest of India. Then England would be finished.

He began to concentrate his forces, steadily, methodically. Division after division was brought up to the borders of Russia. Tens of thousands of muskets were shipped to Warsaw and artillery dumps and supply bases were established in East Prussian towns. Russia swarmed with French spies.

At last everything was ready. On the night of June 23rd, 1812, Napoleon's troops crossed the Niemen and invaded Russia without declaration of war. Invasion had been foreseen; nevertheless the actual fact came as a surprise. News of it was brought to the Tsar while he was attending a ball.

The Russian army of those days was built on the European pattern, but it was greatly hampered by the backwardness of feudal Russia.

Napoleon hurled against Russia forces drawn from almost all of Europe. He mustered Frenchmen, Germans, Austrians, Portuguese, Belgians, Spaniards, Swiss, Croats and men of other nations. Many years of actual fighting experience had given his marshals a splendid schooling in the art of war. His army, never beaten, was considered invincible. His military genius was almost unrivalled in history, and was acknowledged by the Russians, whom fate now pitted against him. When someone once spoke disdainfully of Napoleon in the presence of Kutuzov, Commander-in-Chief of the Russian army, the latter sternly reprimanded him, saying: "Who gave you the right to mock at one of the greatest of men?"

The French army was three times the size of the Russian, which at once began to retreat. Owing to their shortage of manpower the Russians could not afford to risk a pitched battle, they stood to lose all their troops. Consequently they kept retreating, harassed by the enemy and tormented by the weather. At first, cold and endless rains; and later, unbearable heat. They fought exhausting rearguard actions and retired further and further inland. The situation was fraught with great danger. Everything was at stake and the contest seemed utterly hopeless.

Napoleon captured Smolensk and his huge army came out on to the Moscow highway. The year was 1812.

* * *

In November (old style—October), 1917, under the leadership of Lenin and Stalin, the Revolution triumphed. But to make the Revolution proved easier than to defend it. Incalculable forces of reaction rose in rebellion against it. They found support within and without the country, striking without cease, now here, now there. Soviet Moscow had to strain every nerve to repel the enemies that beset her on all sides.

The Germany of the Kaiser, at that time still unbeaten, seized and plundered the Ukraine, appropriating about 40,000 car-loads of raw materials and grain. She invaded Byelorussia, Transcaucasia and the Crimea. She occupied the Baltic area and threatened Petrograd.

The Cossack South, the Kuban and Don areas, were in the hands of rebels. The leaders of the Russian *Vendée*, Generals Krasnov, Kornilov and Denikin, were recruiting forces there for a campaign against Moscow.

The entire East was cut off from the capital. Siberia was controlled by the Whites under Admiral Kolchak.

Months passed. Moscow was in the grip of a blockade, and its strength began to ebb. No sooner had the enemy been pushed back in the West, by mustering all available forces, than a new threat loomed in the East. No sooner had the threat in the East been eliminated than a new foe pressed on from the South. When the Ukraine was liberated from the Germans, that country was again thrown into commotion by the counter-revolutionary revolt of Makhno and Grigoryev. The East was menaced by Kolchak.

The ring of fire around the young Soviet Republic was closing in. Soviet power was maintained only in the central part of the country, which was deprived of grain, metal, oil and coal.

In Moscow the food shortage became acute. Two ounces of bread every other day was the ration, and even then the flour was mixed half and half with oil cake. Intense cold prevailed in Moscow, and all the fences were torn down for firewood. Many tables and cupboards also found their way into the stoves. The streets were obstructed with ice-covered snowdrifts; carcasses of horses, their bellies distended, lay sprawling in the streets, neglected. The army was hungry and ill-clad, and very short of arms.

Then came the year 1919. The spring was marked by hard fighting against Kolchak. His huge army of Siberians crossed the Urals, broke through the Soviet front and, heading for Moscow, reached the Volga. At the same time Yudenich was advancing from Estonia. Treachery put him in possession of two forts, which permitted him to come close to Leningrad. Hardly had the Red Army, after a colossal effort, succeeded in driving Kolchak and Yudenich back, when Denikin's White Army breached our southern front and launched a powerful offensive to the north, again placing the young Soviet Republic in dire jeopardy.

The Soviet troops suffered defeat after defeat in the South. Soon all of the Ukraine, the Crimea, the Don region and the city of Kursk were in Denikin's hands. The White Guards hurled Mamontov's cavalry into the rear of the Red Army, in the direction of Tambov. Early in October they took Voronezh and then Orel. The Red Army was unable to stem the tide—Denikin was nearing Moscow. At this critical juncture Yudenich's army again appeared at the Estonian border. It was now reinforced with tanks. Overcoming all resistance it swiftly pushed ahead and penetrated to the suburbs of Leningrad. A few more hours and the city would be taken. The Whites were already drawing up lists of Petrograd residents to be singled out for execution.

The doom of the young republic appeared sealed. A prize of a million rubles was offered for the first White Guard regiment to enter Moscow's Red Square. A desperate hour. Only 120 miles separated Moscow from Tula. And Denikin was at the gates of Tula. The year was 1919.

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Hitler was at the gates of Tula.

The German army, outflanking Moscow from the south, reached Tula, by-passed it and advanced swiftly to the north to close the pincers gripping the capital.

By a swift succession of sharp blows the German army in the north reached Yakhroma and struck south to snap the pincers.

The jaws were closing on Moscow.

CHAPTER II

MOTHERLAND

A convex lens will concentrate the rays of the sun into a bright red-hot point. The Russian concentrates his love of country upon one point: Moscow.

Many cities are of earlier origin—Moscow is not even a thousand years old. Many cities are more comfortable—the capital has too much brick and too little greenery. Many cities are more beautiful—its style has no unity, no harmony. But this does not matter. . . .

Some of us grew up in Moscow, others have as yet had no opportunity of even visiting it—but that is immaterial. It was here that Russia grew to manhood. It was here that we came into being as a people, that we grew into a State. Moscow's destiny is our destiny.

Russians are not prone to self-complacency or self-adulation. They are rather inclined to under-estimate their possessions. And yet can anything be more beautiful to us than the Kremlin?

There it stands on the banks of a tranquil river, its crenellated walls hoary with age, the roofs of its tall towers faceted with dark-green tiles. Behind the walls its palaces and golden-domed cathedrals on the emerald slope of the hill resemble a heap of jewels lying on the velvet lining of a mahogany casket.

At one time the Kremlin had a direct function to perform: Muscovites cast their enemies from its walls. Gradually it lost caste as a fortress and its formidability became symbolic. In olden times the Kremlin protected the Russians; now the Russians protect the Kremlin.

There are gates in the Kremlin towers, whence radiate the thoroughfares that traverse our Motherland throughout its length and breadth. To begin with, there are the streets of Moscow; then come the railways and highways; and lastly the farm tracks and mountain paths.

First of all Moscow's streets. Their pattern resembles the cross-section of a tree trunk—concentric circles cut by radii, trade routes, extending in all directions. The very lay-out of Moscow betokens its centrality. It is the hub of the country. Along the ever-widening circles, Moscow's successive circumferences, at one time ran the city walls. As Moscow grew it kept adding to its defences. In the areas bounded by the circles and the radii lay a maze of alleys and lanes.

There are hardly any straight streets in Moscow. Not one but has its bend or curve. The city was not built—it just grew, naturally, spontaneously, nurtured by the inherent strength of the country, reproducing in the intricate web of its streets the intuition of the trail-blazer.

There are no streets dating exclusively from any particular epoch. The city had no mania for conservation. The decrepit was allowed to die of itself and new growth to sprout wherever it found room. An ancient little Russian church with onion-shaped domes and low big-bellied columns stands among wooden homes of the nobility, resembling country houses, in the classic style of the epoch of Catherine II, among government buildings in the Moscow adaptation of the Empire style, displaying pompous façades, among mansions of enlightened merchants, *style moderne*, and huge brick apartment houses, architectural eyesores unimproved by their tasteless ornamentation.

Through this confusing welter of old and new structures, this conglomeration of styles and periods, we had begun to see the contours of the new—Soviet—Moscow with ever greater distinctness. While retaining the main features of the old city's plan, the reconstruction authorities are firmly discarding the obsolete. Formerly horse-drawn cabs rattled over cobblestones, now modern cars glide noiselessly over asphalted roads. Lanes of ramshackle little houses that protruded at every angle on to the narrow pavements have given way to widened thoroughfares lined with massive buildings that produce an impression of airy lightness—buildings in which geometry has worked hand-in-hand with art. The textile mills, formerly

Moscow's only industrial establishments, have receded into the background overshadowed by modern machine-building plants. The city formerly consumed nearly half the water of the shallow River Moskva; now a new canal fills it with fresh water from the Volga.

Old Moscow was not torn down to be replaced by a new city. Moscow was not to be discarded as the capital with the idea of building a new Soviet capital from scratch. Moscow was rejuvenated from within. A similar rejuvenation took place throughout the land—not a casting aside of the past, but a surmounting of it.

Moscow is the nodal point of Russia. Here the history of the country crystallized. Here Pushkin was born. Here Lenin lies in state. Here Stanislavsky staged Chekhov's *Cherry Orchard*. Here Tchaikovsky wrote his inexpressibly Russian *Andante Cantabile*. Here Stalin lives and works.

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Rays emanate from the Kremlin, cut across Moscow and disperse into the adjacent countryside.

Moscow lies in the centre of the immense Russian plain. There is something mild and contemplative about this region. Perhaps it is even somewhat inert; but it is infinitely lovable. An inexplicable charm endears to us these essentially dull surroundings. In the innermost recesses of the soul of the people their attachment to this soil has grown through the centuries into love. Long, long ago people settled on this land, between the Oka and the Volga, and here in due time they grew to nationhood. In ages of toil man and nature were drawn closer together, and in the soul of our people our country began to live a second life.

A green meadow dotted with tiny golden flowers, a path through a field of rye, log cabins at the edge of a forest, gentle hills rising and falling like a heaving chest. The sudden steep fall of a bluff river bank. The silence of broad streams, graceful river bends, the hidden depths of their waters. The care-free merriness of birch leaves rustled by the wind in the rays of the summer sun. The solemn verdure of fir and pine amidst the cold white snow. The smile of sadness and the tears of joy. Such are the surroundings of Moscow.

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Highways and byways start at the hub that is Moscow, cutting across thousands of miles in every direction and reaching out to the uttermost ends of our spacious country.

Take the road to the North. Towns become few and far between; fields gradually give way to forests. Where forest meets sea, at the spot where the Baltic, stout arm of the Atlantic, extends deepest inland, stands Leningrad, the northernmost of the world's big cities.

Our love for Moscow is passionate, our love for Leningrad proud. Moscow grew up of itself, with the growth of the Russian people. Leningrad is a conscious product of our efforts. Moscow's beauty lies in its individuality, its freedom from affectation. Leningrad's glory rests on the tremendous effort of will by which seclusive, patriarchal Rus recast her character in a new mould.

The site on which Leningrad stands was wrested from nature, its location deliberately selected, its plan carefully drafted, its destiny traced in advance.

This city was built by Peter the Great. By force of arms Peter gained an outlet to Europe by sea. On the western border of the country he built a combined port and capital; here centred all his reforms, all his ideas for the transformation of Russia.

Leningrad did not arise spontaneously but is the product of calculating statesmanship; this makes it doubly akin to us, the witnesses of great reconstruction projects. Leningrad was the cradle of the October Revolution; this makes it doubly dear to us, the younger contemporaries of Lenin.

Leningrad—its wide avenues run as straight as arrows into the light northern mist. The deep waters of the Neva are held in check by granite embankments, whose low lines are counterbalanced by the spires of the Admiralty Building and the fortress of Peter and Paul. A city of one hundred islands, interlinked by five hundred bridges. Its architectural ensembles are a transition from the baroque to the classic and the majestic Russian Empire style, supplemented later by drab apartment houses, built with an eye to maximum profits, and latterly by new modern structures of fine utilitarian grace. Mighty cranes serve the busy port; the up-to-date plants produce the most complex of machines. A city combining culture, technical skill and civic courage.

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Beyond Leningrad lie forests. Near at hand, where the forests have been thinned, live Karelians, an industrious people intent upon their work. For centuries they defended their native soil side by side with the people of Novgorod. This is a country of grim natural beauty—pines cling to granite rocks, crystal lakes sparkle in ever-green forests, rivers rush over foamy rapids. Man does not surrender

to nature here: hook in hand, he darts down swift streams perched on a slippery log; adroitly he circumvents big boulders, ploughs his marshy lands and patiently dries his wet sheaves on poles. He sings his ancient *runes* and adorns the window frames of his tall and tidy cottage with exquisite wooden carvings.

Farther to the north, in the forests along the Onega and Northern Dvina, on the shores of the icy White Sea, dwell Russians, descendants of the people of Novgorod. Here their forefathers launched an arduous struggle against forest and sea, and in this stern contest forged their strong character and hardy physique. These men, armed only with spears, hunted bears, caught codfish during northern storms, and in frail coracles sailed to the rocky shores of Spitzbergen where they set up cross after cross in memory of those who perished in the struggle. These dwellers of the seaboard are efficient without fuss, diligent without over-exertion, modest in their courage and beautiful of soul. Here, hedged off by the forests, Russian culture has been preserved in its pristine purity, uncorrupted. The lumberman sings a ballad of Kiev's legendary giants of the steppe; the collective farmer, in building his cottage, intuitively reproduces the style of ancient wooden architecture; the milkmaid, tatting lace for her apron, recreates original Russian patterns dating back to the fifteenth century.

Still farther north lies the Arctic. Summer here is one continuous day; winter, perpetual night illumined occasionally by the aurora borealis.

Recent years witnessed the inauguration of the Northern Sea Route, with regular summer sailings along the entire Arctic coast. The route begins at Murmansk, a port that never freezes, and, passing Cape Chelyuskin, extends to the Far East. The region of the North Pole was thoroughly studied by Papanin's drifting research station. Russian flyers have blazed an aerial route from Moscow over the Pole to America.

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The road from Moscow to the West lies through forests, glades, pastures and ploughlands, and the villages of the Smolensk district. The same mild landscape so dear to Russian hearts, the same Russian life, but fewer towns and more marshy soil. Fewer factory chimneys loom from beyond the forest and fewer locomotive whistles pierce the air. The fields are thickly sown with flax, for this is the main flax-growing region of Europe. Marshes overgrown with moss lie amidst low hills—the sources of the great rivers that water the Russian plain: the Volga, the Western Dvina and the Dnieper. These head-

waters, with their overland passages from river to river, constituted an important junction of Russia's ancient waterway system.

Beyond Smolensk lies Byelorussia, the home of a kindred people. The Russians, Ukrainians and Byelorussians are the three offshoots that grew from Kiev Rus after she had been decimated by the Tatars. The Russian understands the Byelorussian language without difficulty. Only an experienced eye can distinguish the Russian from the Byelorussian by outer appearance—the Byelorussian, with his light hair and blue or grey eyes, is a better specimen of the pure Slav type.

At first there seems to be no change in the surroundings: The same unfertile, ash-coloured *podzol* soil, with fir woods growing in its sloping eroded moraines, the same fields dotted with the blue flowers of the flax. But there are differences as well. The summers are cooler and the winters milder. When there is a light frost in Moscow, there is likely to be a thaw in Minsk; deciduous trees, including the hornbeam, entirely unknown in Russia proper, are more plentiful in the forests; storks nest in the trees. Central Europe is near.

Nor are the differences limited to nature. The ancient buildings towering above the monotonous sea of little wooden houses betray the architectural influence of the West. We meet feudal castles, a rarity in Russia proper; town halls with clock towers, a cathedral with two tall belfries flanking its façade, sculptures of saints in niches, a winged angel with a cross. On the outskirts of the town are the hovels of an ancient ghetto, huddling close to a synagogue; by the wayside stands a Catholic shrine of the Virgin.

For centuries Byelorussia formed part of the frontier between Russia and the western half of Europe. Her fields were trampled by warring armies and Jesuits tried to stamp out by force the ancient Orthodox faith. The peasants became the serfs of foreign potentates. Enemies descending upon Russia from the West engaged the Russians in battle on the territory of their western kinsfolk. And this brotherhood has been cemented through the centuries by the blood and tears of the Byelorussians, shed in defence of the common interests that united the two nations.

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The Baltic countries: Among the westernmost Soviet territories are the lands of the Latvians, Estonians and Lithuanians. Here everything bears the imprint of the Baltic. A grey horizon overlooking the sea, pines growing on sandy dunes, milch cows grazing in green meadows, tidy cottages sheltered by neatly trimmed trees, crowded city blocks in Gothic style, the rhythmic swaying of masts in the road-

stead. Eight centuries ago the Russians helped the peoples of the Baltic to fight off the Germans who had come from beyond the sea; but eventually the Knights of the Order of Sword-Bearers enslaved these peoples. Two centuries ago the Russians again returned to the coast. Here they developed a big industry supplying the markets of all Russia. Here they built the first Russian aeroplane and the first Russian automobile. A quarter of a century ago Latvia, Estonia and Lithuania formed independent States. Flouting the will of their peoples, the reactionary governments of these three small Baltic States effected their secession from Soviet Russia. Unable to compete with the West, their industrial cities lost their markets and began to shrivel up. Hard hit by the world agricultural crisis, the peasantry became purveyors of cattle and dairy products for the capitals of Europe, at small profit to themselves. In 1940 these three Baltic countries joined the Soviet Union and their several economies amalgamated with the planned economic system of the Soviets.

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The road from Moscow to the South. The air beyond the Oka is warmer and drier, pines give way to oak, the horizon recedes, the soil darkens. Here lies the black earth belt. Around Ryazan, Kursk, Voronezh and Tambov vast fields of grain extend over rolling prairie land whose even skyline is hardly ever broken by forests.

Steppe and forest interlock. Nature favours the forest, advancing from the north, but man gradually cuts it down and the steppe emerges victorious. Nomads from the southern steppes used to attack wooded Muscovite Rus; Rus won. In the course of this struggle Rus pushed further down and became herself a land with a South, a land of steppes. To this day we find among the southern wheat fields traces of ancient fortifications, almost totally obliterated by time. In the South Moscow held her own, and became mistress of the battlefield.

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The farther south, the warmer and more spacious are the steppes. Log cabins give way to whitewashed cottages. Above the wattle fences peer the golden crowns of sunflowers. More industrial towns, more luxuriant orchards. Black earth—exceedingly rich soil. Tall poplars. The gentle landscape of the Ukraine gradually comes into its own, from the Don to the Carpathians, from Polesie to the shores of the Black Sea. Beautiful Kiev, lively Odessa, industrial Kharkov.

A blissful country! The Ukraine abounds in natural resources, so harmoniously arranged and mutually complementary as to seem preconceived and planned. This section of the black earth belt of the Soviet Union has a sufficiency of both warmth and moisture. The cultivation of grain and industrial crops is combined with intensive stock-raising. Here, in the Donetz Basin, are deposits of some of the finest anthracite coal in the country, lying in close proximity to all other minerals essential for metallurgy—iron ore (Krivoi Rog), manganese (Nikopol) and fluxes (in the Donetz Basin itself). Here is an industrial section of the U.S.S.R. amply provided with labour power and transport facilities. The Ukraine has the greatest density of rural population and of railway network in the country. The mining of minerals is here combined with various types of manufacture. It is a land whose unbounded natural wealth is matched by the unbounded talent of an industrious, gay and poetic people.

Such is the Ukraine. The word means "borderland." And such it is, lying as it does along the road over which time and again rolled devastating tidal waves of nomads in migration. After the downfall of Kievan Rus, the Ukraine became a bone of contention between Turkey and Poland. For centuries it was carved and recarved by these rivals.

Peace came only when the Ukraine was reunited with Moscow. Russia protected the Ukraine from the encroachments of both the Polish King and the Turkish Sultan.

After the October Revolution the Ukraine became a free and equal member of the Union of Soviet Socialist Republics. The kinship of the Russian and Ukrainian peoples could at last manifest itself without let or hindrance.

Beyond the Dniester lies that part of Moldavia called Bessarabia, a land of orchards and vineyards. Bessarabia belonged to Russia, but was wrested forcibly from her by Rumania in 1918. It was returned to the Soviet Union twenty-two years later, in a state of poverty and ruin. All Soviet Moldavia was then formed into the Moldavian Soviet Socialist Republic. Thus the Moldavians formed their own State, aided by the Soviet peoples, primarily by the Ukrainians and Russians.

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The banks of the Don, Kuban and Terek Rivers adjoin a plain extending from the Black Sea to the Caspian. Under the warm southern

sun, on rich soil, the high yields of golden grain fairly burst the barns. Vast herds of cattle graze on limitless pastures; vineyards and cherry orchards surround the villages. These are the homelands of the Cossacks.

Three or four centuries ago these lands were known as the "wild fields." Unploughed and overgrown with feathergrass, the haunts of herds of wild horses, these prairies were the pasture grounds of unruly nomad tribes. Here were the southern borders of Russia. From a source not so far from Moscow the Don rolls south to the Azov Sea where its waters mingle with those of the River Kuban, tumbling down from the Caucasian Mountains. To these free lands fled Russians from the North to escape serfdom, unbearable taxes and forced military service. Here the freedom-loving, unsubmissive sons of Rus had to fight off the cruel raids of Asiatic nomads.

Arms had always to be kept within reach. In defending their new homes and freedom, the newcomers learnt to combine the indomitable strength of the Russian with the agility and skill evinced by their enemies in mounted battle. They were called "Cossacks," the Tatar equivalent for "freemen."

Their defence of hearth and home was essentially a defence of what was Russian. Eventually, they became stout defenders of the Russian State, though they had wandered south because of their grievances against it. Moscow utilized the Cossacks for its own military ends. They were granted land and privileges in return for a pledge to appear whenever summoned, fully equipped with arms and mounts.

That is how this famous body of Russian cavalry was formed—bold horsemen on swift steeds, brandishing unsheathed sabres—the Don Cossacks with their red-striped trousers, the Kuban and Terek Cossacks in light blue or crimson hoods and shaggy felt cloaks. To them war means impetuous, irresistible attack. Peace is symbolized by vast cultivated fields, flourishing gardens and vineyards, the white cottages of their thriving villages.

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A mountain range cuts across the steppe; it marks the borderline of the predominantly Russian population. Farther south the Russians are sparsely interspersed among the peoples of the Caucasus, swarthy, lively southerners with an ancient, deep-rooted culture.

The Caucasus, with Mt. Elbrus which is almost three thousand feet higher than Mt. Blanc in the Alps, forms a bridge between two

worlds. Distance is not measured here, as in the plains of Europe, as a horizontal interval of space but rather, as in Central Asia, as a vertical interval. "Higher" or "lower" is no less important a question here than "farther" or "nearer." Over the tops of palm trees on the Black Sea coast one can see mountain peaks covered with eternal snow. As we ascend from the coast to the peaks, on the different levels we find subtropical jungles and terraced tea plantations; then vineyards and fields of corn; then pine forests and lastly Alpine pastures.

Here the mountain ranges intercept the humid ocean air, holding it back from the parched hinterland. The Suram range, which runs athwart Transcaucasia, is pierced by a tunnel. At one end, facing the Black Sea, the climate is oppressively humid; at the other end, facing Central Asia, the climate is hot and dry. The River Rion, flowing westward, has been banked because it is so full, while the waters of the Kura, flowing east, are carefully husbanded and directed into irrigation canals. Both these rivers rise in one and the same area.

Here passed from time immemorial the great historic routes between the continents of Europe and Asia. For thousands of years mankind was tossed about here by a whirlwind of human conflict, elevating or hurling into the dust entire nations and cultures. Seeking refuge from this turmoil and strife, a remarkable diversity of nationalities settled in isolated valleys and deep gorges, preserving their beliefs, languages and modes of life. It was here, according to legend, that Prometheus was chained to a rock for divulging to man the secret of fire; it was here that the Argonauts came in quest of the golden fleece; these were the lands which comprised the Kingdom of Urartu, the oldest State recorded on territory that is now part of the U.S.S.R.; it was here that the Georgians and Armenians produced their fine literary works in days when many peoples of Europe had not yet come into existence; it was here that Rome clashed with Persia, Byzantium with the Arabs, Russia with Turkey.

At the end of the eighteenth century, after numerous vicissitudes, these lands came under the yoke of the Turkish Sultan and the Persian Shah, whose countries were among the most unenlightened of that day. Faced with the complete loss of her independence, Georgia cast in her lot with Russia. The rest of the Caucasus was annexed by the tsars by force. Russian rule put an end to bloody feudal strife, armed raids, and slavery. Trade was revived, and Baku developed into an oil centre of world importance, but the heavy hand of national oppression continued to weigh down the people until the October Revolution. Only the Revolution reconciled the nations. Georgia, Armenia and Azerbaijan voluntarily joined the U.S.S.R. as full-

fledged constituent republics. The Georgian capital, Tbilisi (the former Tiflis), Baku, capital of Azerbaijan, and Erevan, capital of Armenia, remained with Russia's Moscow.

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Beyond the Caspian Sea, as far as the Altai Mountains, extends Kazakhstan—dry steppelands equal in area to half of Western Europe. Here lie vast plains dotted with low yellow hills, permeated with the bitter odour of wormwood and ringing with the shrill, monotonous note of the cicada. Three million Kazakhs roamed with their herds over these immense stretches of land, which at first glance seem almost barren of life. A numerous, capable people had remained nomad herdsmen, retaining right up to the October Revolution the mode of existence of the days of Ghenghis Khan. They lived in felt tents (*yurtas*), had almost no conception of agriculture, and took from their rich soil only the cheapest thing it had to offer—the grasses that grew on the steppes. Yet the land is rich. This hilly plain represents the remains of an ancient chain of mountains that has been worn down by time. Valuable minerals lie at the very surface. An enumeration of the elements they contain would almost exhaust Mendeleyev's table.

During the course of the Five-Year Plans, which reconstructed Soviet economy on a national scale, the Kazakhs settled down, supplementing stock-raising with the cultivation of crops. With the aid of Russian engineers and workmen, the Kazakhs built up a system of railways and a modern industry. In the course of a decade they advanced several centuries. Not so long ago almost the only signs of human habitation in the steppes of Kazakhstan were the round, black traces of camp-fires kindled by wandering herdsmen, who used dry dung for fuel. Now these steppes are dotted with permanent settlements, irrigated fields, collieries and factories, some of them the largest of their kind in Europe.

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Still farther south lies Soviet Central Asia, the land of the Turkmenians, Uzbeks, Tajiks and Kirghizians.

The arid steppes recede into deserts, with more sun and less moisture. Nothing but heat, sand and prickly plants. This land would be totally barren were it not for the mountain ranges cutting across it in the South. The tall Pamir and Tien Shan peaks catch the moisture carried by the higher air currents from the far-off waters of the Atlantic.

The precious vapour condenses to form glaciers and snow-caps, and flows down the mountains to bring life-giving water to the valleys.

A narrow and broken chain of flourishing oases, hemmed in between mountains and deserts, extends from the Caspian Sea to China—water amidst arid sands, fertility amidst sterile waste, dense settlements amidst unpeopled expanses, bright green against a background of yellowish brown. This is the traditional route between East and West, the famous "silk road," one of the Armageddons of ancient history. The sands here and there still disgorge ruins of one-time thriving centres of commerce of world renown. Here trafficked Arabs, Mongols, Chinese and Greeks. In the middle of the nineteenth century, the Russians appeared on the scene. Central Asia became a colony of tsarist Russia; cotton growing was the part assigned to it in the division of labour then existing.

How strong were the economic ties that bound Central Asia to Russia was strikingly revealed during the Civil War of 1917-20, when these districts, temporarily isolated from the rest of the country, were smothered by a superabundance of cotton and wool but suffered severe privations for lack of Volga and Siberian grain and Moscow manufactures. The victory of the October Revolution in the East brought Central Asia back into the national economy, now under Soviet rule. It joined the U.S.S.R. not as a colony but as an equal partner. The Turkmenian, Uzbek, Tajik and Kirghiz Republics that constitute Soviet Central Asia are each full-fledged members of the Union and have commenced to build up their own industries. The ties of Central Asia with Russian Moscow have not been weakened but strengthened by the advance of the eastern republics to social and political equality.

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The road from Moscow to the East.

Clustered around the capital, like the major and minor planets around the sun, are the industrial towns of the Volga-Oka mesopotamia. Some of them have preserved such feudal traces as city walls, some have grown up from villages, and others came into being during the years of industrialization.

Here was the backbone of Russia's industry; here was concentrated the capital which had converted ploughmen and artisans into factory workers. These workers, stemming from the very heart of the backward Russian countryside, acquired technical skill and habits of collective labour in factory and mill. Bearing the brunt of capitalist exploitation, these workers formed Lenin's mainstay in veering

Russia around to a new social life. All adverse factors—the desperate resistance offered by the reactionary interests of the country, the keen privations caused by the blockade, the difficulties of learning the manufacture and operation of complex modern machinery entirely new to Russia—were successfully overcome by Russian enthusiasm, enterprise and grit. The great industrial and moral force which had leaped into existence in the central part of Russia came as a surprise to many, as surprising as the factory blocks, the smoke-stacks, the clatter of machines and the hissing of steam amidst the quiet nondescript landscape of these regions—unkempt fir forest, aspen groves of more modest height, swampy meadows and grey-coloured peasant homes.

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The Volga is the natural nexus between the Russian forests in the North and the Russian steppes in the South; one arm reaches out to Moscow, and another, the Kama, to the Urals. The biggest river in Europe, it rises on the Valdai plateau, whence it emerges a barely perceptible rivulet. Growing steadily, it describes an enormous bow from Rzhev to Stalingrad, terminating in the Caspian Sea. It is not colourful or noisy, but it is broad and powerful; usually calm, it becomes impetuous and irresistible during the spring floods—very like the character of the Russians. The tranquil scene along the green banks and the vast expanse of the much-sung river have always inspired faith in the future of our country.

Centuries of Russian history were made on the Volga. Here, in the days of Ivan the Terrible, Rus began her expansion, her transformation into a State of many nations. The Volga was the scene of mighty popular uprisings. Here river boatmen, exhausted by back-breaking toil, composed some of the finest Russian songs. Here, at Simbirsk (now Ulyanovsk), Lenin was born. The Volga is the axis of Russia.

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Far beyond the Volga are the Urals, this jagged divide between Europe and Asia. Mountains do not seem to harmonize with the level Russian expanses. But these are not such mountains as we find in the Caucasus or the Crimea, with their high summits, luxuriant vegetation and unusual mode of life. Here we have a replica of un-hurried Central Russia, suddenly pushed upwards; the forests are of fir trees, but are hunched; the meadows with their dandelions and

clover lie aslant, and the log-cabin villages with their little old churches are inhabited by miners.

In the course of millions of years, water and sun, frosts and winds, have gnawed away at the Ural mountains, laying bare their mineral wealth. Along the entire range are rich deposits of pure iron; copper has been found in many places; potassium salts and pyrites, oil, gold, nickel and bauxites are in plenty; Ural platinum, asbestos, emeralds, jasper, malachite, rock crystals, amethysts and topazes are renowned throughout the world.

The labour of Russian serfs created in the Urals a metallurgical industry which at one time ranked first in Europe. These mines and furnaces equipped the armies of Peter the Great, Suvorov and Kutuzov. Russian ordnance was cast here, and here were forged the famous ornamented steel blades known to split a hair.

The traditions of ancient Russian craftsmanship were revived under the Five-Year Plans, when huge modern plants arose in Magnitogorsk, Chelyabinsk, Sverdlovsk and many other towns in the Urals. Thus regenerated, the Urals became the backbone of modern industry in the Soviet East.

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Still farther off lies immense Siberia. Its most developed section is the south-west. There, in the steppes cut by the Trans-Siberian railway, the longest trunk-line in the world, the Russian population is densest. The vast open spaces and the absence of serfdom wrought the Russian settler into the Siberian type: Strong-willed, energetic and sober-minded, accustomed to rely on his own devices and overcome all obstacles. The settlers have impressed upon the landscape a resemblance to the Russian towns, villages and fields they left behind. But everything here is more spacious, more expansive, conceived on a larger scale.

To the north of the Trans-Siberian railway extends in an almost solid stretch the taiga, a northern jungle, the greatest coniferous forest in the world. It sweeps across the entire continent, from the Baltic to Kamchatka. At the dreamy bottom of this ocean of trees lie sparse settlements. The sound of an axe, the crack of the hunter's gun and the clatter of dredgers digging gold are lost in the endless, barely audible murmur of the taiga.

With cold majesty the great Siberian rivers roll through these forests, on their way to the Arctic Ocean. All of Western Europe could easily be tucked away in the expanse between the Ob and the Lena rivers.

A short summer. A rugged blue line of low mountains. A dishevelled forest marked here and there by the grey, almost transparent tops of dead, dried-up trees. Rotten stumps in boggy marshes where, under the peat, glacial ice is to be found. The gnarled roots of fallen trees, resembling the silhouettes of dancing medicine men.

Long, severe winters; a starry sky; everything in the throes of numbing cold and snow. A frozen tree cracks amidst tense silence. Mercury freezes. A man's breath can be heard, because the vapour instantly freezes and rustles. The temperature drops to minus seventy, eighty and sometimes even minus ninety degrees Fahrenheit. The pole of cold is situated in these parts.

The country produces little, but the little it yields is precious—gold and fur. To find them, Russians have scoured these remote roadless expanses from end to end.

* * *

Russian territory extends to the Pacific Coast and stretches along that coast for several thousand miles, from Vladivostok to the Bering Straits. In the winter the straits freeze over, forming a bridge between the U.S.S.R. and the U.S.A.

On the Pacific the Russians encountered such exotic phenomena as fire-spitting volcanoes, terraced forests, tigers and monsoons.

The settlers gradually adapted themselves to the new environment, adding local colour to their own age-old habits and customs. Cottages were built in Russian style, roofed with American corrugated iron; wheat was raised on the humid Amur soil; before the cottage windows stood the black birches of the Amur instead of silver birches; meat was replaced by fish and dried sunflower seeds by cedar nuts. While making concessions to their new surroundings, the Pacific Coast settlers preserved their spiritual selves. They remained Russians true to type.

* * *

Such is our country. We note with pride how huge it shows on the map. Here is our Motherland, occupying one-sixth of the globe's surface, two Europes, or half of Asia. From Moscow to our remotest border it is almost the same distance as from the equator to the pole. It is still afternoon in Moscow when the Kamchatkans enjoy their midnight sleep.

There is hardly a land blessed with greater wealth. In such mineral resources as oil, iron, manganese, gold and potassium, the U.S.S.R.

surpasses all other countries. Nowhere else are there such vast forest tracts, such expanses of fertile black soil.

Ours is a land of many superlatives: Here is the world's biggest lake, the Caspian; here is the world's deepest lake, Lake Baikal; here is the world's longest glacier, the Fedchenko on the Pamirs; here is the world's tallest volcano, the Klyuchevskaya Sopka on Kamchatka.¹

No country has greater meteorological diversity. It includes all climes except the tropical. In winter it is colder in Yakutia than at the North Pole. In summer it is hotter in the Kara-kum desert than at the equator. Roses bloom in Transcaucasia when snow falls in Moscow. Grain ripens in Ashkhabad, Turkmenia, when Nikolayevsk-on-Amur is snowbound to the roofs. The Lena in the North is icebound for eight months of the year, while the River Rion in Georgia never freezes at all. On the coast of the Sea of Okhotsk a larch barely attains the thickness of a child's arm in the course of a century, while in Abkhazia bamboos shoot up half a yard a day. For long periods of time the mountain-locked valleys of the Trans-Baikal region feel not the slightest breeze, while on the Pamirs the wind drills holes through the rocks.

The physical geography of almost all the world finds illustration in our Soviet Union. The lotus, a native of Egypt, grows in the estuary of the Volga. The zebu, India's humped ox, is utilized as a draught animal in southern Azerbaijan. Murmansk has its fiords, like Norway. The date palm of Arabia has been introduced into Turkmenia. Tajikistan has sugar-cane plantations and Sakhalin has bamboo. Franz Josef Land is encrusted with eternal ice, like Greenland. Kamchatka has hot springs, like North America, and violets bloom there in winter amidst the snowdrifts.

The arctic owl as well as the pink flamingo have their habitat in our country. Dwarf birches and evergreen palms grow in our land.

The U.S.S.R. is inhabited by many nationalities: Russians and Ukrainians, Georgians and Armenians, Byelorussians and Jews, Tajiks and Estonians, Beluji and Eskimos, Tatars and Kazakhs; even Arabs, near Samarkand, and even Negroes, in the vicinity of Sukhum—a total of 185 peoples. Each nationality has its own mode of life, its own language and culture—and all are united by equal rights and by love of their great country, the Soviet Union. History has brought them together, a consolidated national economy has cemented the bonds between them, the Revolution has made them brothers.

¹It is the tallest not relatively to the sea level, but to the surrounding country.

Most numerous among the Soviet peoples are the Russians. They have rallied the others to their cause. Eldest among equals, they lead their sister nations in the Soviet commonwealth. They have built up the unity of this country from ocean to ocean. This land has been made fertile by the sweat of their forebears, has been defended by their blood. This is the land that owns our unbounded filial love.

* * *

With trepidation we watched the map of our country in those grim days of 1941 ; a horrible pall was moving across it, blotting out more and more of it from view. Byelorussia was gone, the Baltic lands were no more. The enemy had reached the gates of Leningrad. The Ukraine was captured, Smolensk had fallen. We scanned the map for the names that ring of our past glory : Lake Peipus and Poltava, Kulikovo Field and Borodino. Already they were hidden by the dark cloud that was advancing upon Moscow.

CHAPTER III

LOOKING BACK

Lake Peipus, Kulikovo Field, Poltava, Borodino, Moscow. These names kindle the fires of hope in the heart of every Russian. Their fame lives in the memory of the people. Every Soviet patriot recalls the crisis in his country's history associated with each of these names.

* * *

. . . The year 1240. Rus was on the verge of catastrophe. She had been ravished and humiliated by the Tatars. Only in the north-west the fires of independence were still kept burning. Novgorod alone stood unvanquished. It sent tribute to the Tatars, but had not been laid waste. Having devastated all of Central and Southern Russia, the Tatars had been drawing close to Novgorod, but had turned back when they were within sixty miles of their goal.

And now the sword was raised over this last free Russian town. The Germans had occupied the Baltic lands and were fighting their way across Novgorod soil. Nor were Germans alone; in alliance with the Magister of the Order of Teutonic Knights were the kings of Denmark and Sweden.

A force of crusaders, headed by the redoubtable Birger, sailed from Sweden and entered the Neva. They meant to strike at Novgorod from the north, across Lake Ladoga.

In this hour of trial Rus produced a leader capable of coping with the emergency, a man combining military valour with distinguished statesmanship.

On learning that Birger's vessels had passed the mouth of the Neva, young Prince Alexander of Novgorod—he was barely twenty years old—did not wait for them to come to the Volkhov River; he gathered his men and marched to meet the foe. Alexander could not afford to wait for help to arrive and told his followers: "We are few and the enemy is strong; but God is not on the side of might but on the side of right. Come on, men; follow your prince!"

On July 15th the enemy vessels were anchored near the junction of the Neva and its tributary, the Izhora. Tents were pitched on the banks, as the Russians were not expected. Alexander made a surprise attack "with the full fury of his courage."

Smallness of numbers was compensated by the suddenness of the onslaught and the courage of the attackers. The young Prince, heading his force, hewed his way into the midst of the enemy camp, reached Birger himself and "put his brand on his face with his sword." Obyslav Yakunovich, one of Alexander's men, fought like a titan, laying about him viciously with his heavy battle-axe. The Prince's huntsman, Yakov Polovchanin, at the head of a small group of dare-devils, attacked an entire enemy detachment, for which he received the public commendation of the Prince.

A pennant fluttered over Birger's cloth-of-gold tent, in the centre of the camp. The youth Sava fought his way to the Swedish standard and did not desist until he had chopped it down.

The invaders offered stubborn resistance but were forced back to their boats, the Novgorod men pressing on in close pursuit.

A group of Novgorod footmen dashed after their leader, Misha, and succeeded in sinking three vessels, putting their defenders to the sword.

Gavrila Alexich (a forebear of the poet Pushkin) saw a party of Swedes carrying off a young prince to one of their vessels. He spurred on his horse and dashed across the gangplank on to the deck. When the enemy hurled him into the river together with his steed, he swam out, again attacked the Swedes, slew one of their chieftains and in single combat cut down a bishop.

The battle had lasted all day. At night the crusaders hastily weighed anchor, their vessels laden with the corpses of their dead.

Birger's blow was foiled. He never again ventured to invade

Russia. Alexander returned to Novgorod covered with glory; in honour of the victory on the Neva he was surnamed "Nevsky."

But the Novgorod nobility began to quarrel with the imperious Prince, and Alexander Nevsky left the town.

Taking advantage of his absence, the Germans at once applied pressure, took Pskov, and reached the outskirts of Novgorod. The townsmen had to beg Alexander to return. All Rus was in danger, not only Novgorod; so Alexander agreed to bury past grudges and to resume the helm. By a sudden raid he captured the German key-point on Novgorod soil, the fortress Koporye, and razed it to its foundations; part of the surviving garrison were taken prisoner, and the rest given their freedom, while all local inhabitants who had betrayed Rus and gone over to the enemy were hanged.

The Germans, however, were still in possession of Pskov. Alexander journeyed all over Rus to muster an adequate force. Though exhausted by the Tatar yoke and torn by internecine strife, Rus gave all she could in the interest of the whole country. Men from Suzdal, Tver and other towns flocked to the banner of Novgorod. The people rose and, led by Alexander, took Pskov by storm.

The main forces of the enemy, however, were still intact. Realizing that she faced a strong and crafty foe, Germany had sent the knights reinforcements. Never before had they been so strong and numerous in the Baltic.

Alexander entered the lands held by the enemy. The Germans attacked one of the Russian detachments and exterminated it. On learning of this Alexander withdrew to Lake Peipus, on the border, to wait for the enemy.

It was early in April, 1242. The ice on the lake was rather thin, but it still held, particularly near the shore. Alexander chose ground "by the Raven's Rock," on the ice, as the site of battle and, knowing the tactics of the Germans, lined up his warriors in the shape of a heel, with the opening facing the Germans. The entrance to these pincers waiting to crush the enemy was masked by rows of unmounted bowmen who were doomed to almost certain death. The tipped helmets of Alexander and his retinue glistened in the morning sun, their arms were adorned with silver and gold, and gay-coloured standards fluttered over their ranks.

The Germans came on in their favourite formation, a slightly blunted wedge, which the Russians called a "pig." In the front ranks and on the flanks were mounted knights armed with swords and shields of the best Damascus and Rhenish steel, clad in armour of finest Italian, French and Saracen workmanship. These were the tanks of that day. In the first row were five stalwart knights; in the second

seven knights, in the third nine; then eleven, thirteen, etc. Inside the wedge were warriors on foot, mostly Chuds (Ests and Livs) subjugated by the Germans.

The iron spearhead moved nearer and nearer like inexorable fate. It was aimed at the Russian centre, which it proposed to split and then destroy piecemeal.

Alexander raised his arms in prayer: "May God judge this quarrel between me and these overweening people."

The Germans drove into the Russian ranks with terrific force. The picked knights that knew no defeat came riding down on the Russian vanguard.

The impact of the knights' mailed fist was staggering—the Russians began to turn and run. The wedge was penetrating deeper and deeper into the Russian array. And then the wings of the Russian force, the sides of the "heel," began to close in, hammering away at the flanks of the Germans. The jaws of the pincers clinched. The purpose of the Russian manoeuvre was attained. In the general *mêlée* that now ensued the mobility of the German cavalry was greatly reduced, depriving the enemy of his main advantage. It was an indescribably bloody engagement. Chroniclers refer to it as the "slaughter on the ice." The Russians were fully aware that the destiny of their people was in the balance. The Prince's own retinue, which had been hardened in former battles, as well as the popular auxiliary forces from the various Russian towns, which consisted of untrained peasants and artisans armed with axes and knives, fought with desperate fury. "The crack of broken spears and the din of clashing swords were like the raging of a storm, and the ice could not be seen for the blood with which it was drenched. . . ." The tide of battle turned. The Germans were beaten. The first to run were their auxiliary troops, the Ests and Livs. They were followed by the Germans.

Five hundred knights were killed and many drowned in the chilly water as the ice broke under their weight. The losses were tremendous for those days. The flower of the German army in the Baltic fell in this battle. Alexander returned from the field to be met by a jubilant people. The captured "Knights of the Madonna and the Sword" followed barefoot behind Alexander's horse.

That was on April 5th, 1242. The outcome of the battle changed the relation of forces. For a long time the Germans continued to threaten north-western Rus, but they were no longer a mortal danger. Preferring death to German bondage, Rus had united to fight the common enemy when the decisive hour struck.

More than once after the Battle of Peipus did the German knights make raids on Pskov, and more than once did the Germans score in

this or that encounter, but they never captured Pskov again. Germany, saved from Tatar incursions by the courage of the Russians who perished on the ruins of their towns, again and again attacked exhausted Rus, but Rus, uniting around Moscow, grew stronger with each passing century and her retaliatory blows became more and more effective.

The victories of Alexander Nevsky undermined the might of the Order of Teutonic Knights, which soon began to decline. The courage of the Russian people stemmed the eastward tide of the Germans.

* * *

The year 1380. For a century and a half the Russian people had languished under the yoke of the Tatars. True, the Tatars did not interfere with the established ways of life and did not molest the Church, but still the people were enslaved. They paid heavy tribute and keenly felt their national humiliation. The slightest disaffection was sure to be followed by savage punitive raids, in which the Tatar again laid waste the Russian lands. Blood would flow in streams, towns would be sacked and razed, and the fields would wait in vain for the tiller.

But time marched on. Under the mantle of submission a consolidation of forces was slowly taking place in Rus. The Grand Principdom of Muscovy was growing, gradually uniting and consolidating split-up feudal Rus. At last came the hour when the Tatars learned to their sorrow that the Russians had grown strong enough to match forces with them.

In the winter of 1375 a joint force of Moscow and Suzdal troops appeared on the Volga, attacked the Khanate of Kazan, which was independent of the Golden Horde, and made it a vassal. This was the first victory scored by the Russians over the Tatars.

But the strength of Rus was only beginning to mature, and she had to pay dearly for her first open revolt. The Tatar Prince Arapsha invaded the Russian lands in 1377, capturing and sacking Nizhni-Novgorod (now Gorky).

But once the fight had started the Russians stuck to their guns. When the Tatars, led by Murza Begich, again invaded Russia the following year, Muscovy met them on Ryazan soil and put them to ignominious flight.

In all these battles men of Suzdal, Nizhni-Novgorod, Ryazan and Moscow fought side by side, learning that with unity in their ranks they found the Tatars no longer invincible.

Mamai, then ruler of the Golden Horde, saw that Rus had changed essentially and that a new policy was required. Hitherto the Tatars had not encroached on the authority of the Russian princes but had empowered them to collect tribute for the Golden Horde. Now it was deemed necessary to do away with the princes and deprive Rus of all semblance of independence. Fully realizing the growing strength of the Russians, Mamai schemed for their utter destruction. After concluding an alliance with the Lithuanian Prince Jagiello and with the traitor Oleg, Prince of Ryazan, Mamai set out against Rus with a huge army which, in addition to Tatars, included Genoese from the Crimea, Circassians, Armenians, Ossetians and many other nationalities.

The campaign of 1380 was to decide the fate of Rus. Mamai was so confident of victory that he forbade the cultivation of the fields in the territory of the Golden Horde, as he counted on Russian grain.

Dmitri, then Grand Prince of Muscovy, bore the responsibility for the whole of Rus. He knew the strength of Mamai and mustered all available forces. Almost all Rus backed Muscovy in this stern hour of trial. Yaroslavl and Vladimir, Suzdal and Kostroma, Serpukhov and Murom sent contingents in aid of Dmitri.

When a messenger brought Dmitri the tidings that the troops of Mamai, Jagiello and Oleg were moving from different points in the direction of the Don with the intention of uniting there for a joint attack on Moscow, he had the courage to decide to march at once against Mamai, though his preparations were far from complete. The Prince correctly assumed that Mamai's must be the main force, and set out to make sure of him, leaving no troops to guard against Jagiello and Oleg in order not to dissipate his forces. Here was risk dictated by courage and wisdom.

With fluttering standards, accompanied by the priests and acclaimed by the populace, the Russian army marched out from the Kremlin. On September 6th it gained the upper reaches of the Don. Mamai was some three days' march to the south, expecting any moment to join forces with Jagiello, who was coming from the north-west. Oleg was approaching from the north-east. As a matter of fact, the Russian troops were surrounded. They numbered 150,000 men, the Tatars twice as many. But Dmitri steadfastly marched to his goal. To frustrate the junction of the enemy forces he swiftly crossed the Don, bent on engaging the Tatars at once. The river might bar a retreat, but Dmitri accepted this risk, desiring to demonstrate to the Tatars that he did not fear them and to let his troops know that they must win or die.

On September 8th the Russian and Tatar troops clashed on Kulikovo Field. Jagiello's men were but one day's march away.

The terrain of the battlefield was unfavourable for the Russians. The open ground gave freedom of operation to the Tatar cavalry, Mamai's main force.

In the dense morning fog Dmitri's troops deployed for battle: In the centre he placed the "Big Cohort," and on the flanks the "Right-Hand Cohort" and the "Left-Hand Cohort," the latter guarding the crossings over the Don. Both flanks were protected by gullies. In front of the "Big Cohort" was placed the "Advance Cohort," consisting mostly of footmen.

After completing the inspection of the troops Dmitri removed his princely garments and gave them to his favourite Boyar, Brenk. Brenk mounted Dmitri's steed and took the Prince's black standard. Dmitri himself donned a rough cloak, mounted some soldier's horse, and rode out to join the "Advance Cohort."

As the fog lifted, both armies advanced until they were only a short distance from each other, then they halted. In accordance with the custom of the day, a Goliath named Cheli-Bey rode forth from the Tatar formations to challenge a Russian champion to single combat and thus commence the battle. His challenge was taken up by a monk named Peresvet. With levelled spears each charged his adversary at a full gallop. The horses clashed and fell to their knees, while their riders were both thrust through by the spears.

To the sound of trumpets Dmitri and the "Advance Cohort" launched an attack against the columns of Genoese infantry. The Tatar cavalry rushed to their infantry's aid. In the ensuing battle, "spears were broken like straws, arrows descended in showers, dust blotted out the sun, swords flashed like lightning, and men fell like hay under the scythe, while the blood flowed in rivulets."

The "Advance Cohort" centred upon itself the brunt of the Tatar attack, and was entirely wiped out. It fought with incredible stubbornness in order to break the impetus of the enemy attack, even at the price of its own extinction.

After crushing the "Advance Cohort," the Tatars attacked the main Russian forces. In the centre the Russians were holding their own, though Boyar Brenk, in the apparel of Prince Dmitri, had been killed and the Prince's standard brought down. But the "Left-Hand Cohort" began to falter. Here the Tatars were fighting with incredible ferocity, anxious to seize the crossings over the Don. The front was bending under the strain. Hewing down the fleeing Russians, the Tatars were outflanking them on the left—and were already in sight of the bridges.

At this frightful moment, when the fortune of battle seemed definitely to favour Mamai, and the Russians, cut off from the Don, seemed doomed to annihilation, a body of picked Russian cavalry struck from ambush at the rear of the Tatar troops. Dmitri had hidden them in a forest behind the line of battle, foreseeing that the Tatars would strike their main blow in the direction of the Don crossings. Already the enemy considered the Russians beaten, when, to their amazement, they brought out new forces.

The ambushade swiftly attacked the Tatars, who were overwhelmed by the suddenness and weight behind the new blow. The battle flared up anew. Now all the Russian troops charged the enemy and the Tatars were put to flight. The Russians pursued them until evening over a distance of between 20 and 30 miles.

On learning of Mamai's defeat, Jagiello swiftly turned back to Lithuania, followed by Oleg, Prince of Ryazan.

The losses of both sides in this battle were from 200,000 to 300,000 men. The Tatar troops were routed and the Russians sapped of their strength. Dmitri survived by sheer chance. He was found several hours after the battle, lying unconscious amidst corpses, his armour battered and torn.

The victory of Dmitri, henceforth surnamed Donskoi, over Khan Mamai on the Field of Kulikovo did not free Rus of the Tatar yoke—it lasted for another hundred years. But its effect was tremendous. This victory over an enemy who enjoyed a numerical superiority of two to one and who was formerly considered invincible so raised the national self-esteem of the Russians that the abolition of the Tatar yoke could now only be a question of time. Rus, being united by Muscovy, was rapidly gaining strength. She was being consolidated by the struggle for territorial integrity and political independence. Meanwhile, the Golden Horde, torn by internal strife, was steadily growing weaker. In 1480, when the Tatar Khan Akhmat met the troops of Ivan III, Grand Prince of Muscovy, on the Ugra River, he dared not give battle but discreetly retired to the lands of the Golden Horde. That marked the end of the Tatar yoke. Rus was free at last.

* * *

The year 1612. Troublous times in Russia. The country was living through a terrible crisis from which, it seemed, it would never recover.

The land was in ruins. Moscow was in the hands of the Poles; all national ties had begun to disintegrate. Russia had no government

and no army—it seemed that nothing could save her. But she still had her people.

Here and there, in distant towns not connected with one another, armed detachments appeared, vanished and reappeared, attacking the invaders and driving them now from one town, now from another—taking revenge for the destruction and death that they had wrought.

Towns began to communicate with each other. One town wrote to another: "Why do you submit? Rise up!" These letters were publicly read from the pulpit. And the towns did rise up.

The people were rising. They called for leaders. And leaders came—from the midst of the people.

In the heart of the country, where the Oka flows into the Volga, stands the town of Nizhni-Novgorod. In the autumn of 1611 it received a letter calling upon the people to take action. This was the drop that caused the cup of their patience to overflow. The men of Nizhni-Novgorod summoned a popular levy to save not merely their home town but all the land of Rus. A simple Russian, the illiterate butcher Kuzma Minin, exhorted the populace from the cathedral steps: "Never shall aliens rule Russian lands!"

The meat-dealer Kuzma Minin and Prince Dmitri Pozharsky, an experienced soldier, led the people of Russia. The citizens of Nizhni-Novgorod gave a third of all their possessions for the maintenance and arming of the warriors. The rich sold their homes, the poor gave the clothes off their backs. Men donated money; women sacrificed their ear-rings. Nizhni-Novgorod called on the other towns, and help poured in from all sides. Not only Russians—Tatars, Chuvashians, Mordovians rallied to their country's aid. Russia rose in arms. The people's army marched slowly on Moscow, past fire-gutted villages and ransacked towns. It gained in strength at every step as more and more detachments joined it. Finally it reached the walls of Moscow.

The renowned soldier Chodkiewicz now rushed to the aid of the Poles, who had esconced themselves behind the Kremlin walls. He was bringing reinforcements and food supplies. But he was a day late. Minin and Pozharsky had already laid siege to the Kremlin.

Early in the morning of August 22nd, 1612, the strong forces brought up by Chodkiewicz made an attempt to break through and relieve the Kremlin. A heated eight-hour battle was fought in the streets of the city, on the site of buildings reduced to ashes. The Russians held out, indeed with great difficulty, but they finally beat back the enemy.

Two days later Chodkiewicz launched a new attack, striking from Zamoskvorechye, the district beyond the Moskva River. His aim

was to hurl the levy into the river. The Russians fought gallantly, trying to repel the charges of Hungarian cavalry and German *Landsknechte*, but the overwhelming forces of the enemy pressed them back to the river bank. Part of Chodkiewicz's troops broke through at one point and, over a makeshift bridge, penetrated to the Kremlin.

Seeing that the enemy was gaining the upper hand, Minin hastily swam the river on his mount. At the decisive moment he descended upon the enemy from the rear, leading 300 horsemen shouting "For Moscow! For Moscow!" The swift charge gave heart to all the Russian troops. They rushed into battle with renewed courage and routed the enemy. That night Chodkiewicz fled with the remnants of his troops.

The Russians kept up their siege of the Kremlin for two more months. The besieged were starving but refused to surrender. They ate up all the dogs and cats, dug up graves and devoured the corpses, and in the end began killing and eating their prisoners, and then one another. The Polish merchant Balyka recorded that the first to resort to cannibalism were the German mercenaries. The Kremlin did not surrender until October 27th, 1613.

The Polish King Sigismund himself tried to march on Moscow at the head of German mercenary troops, but was defeated by the Russians at Volokolamsk.

Russia survived these calamitous days; she recovered and grew in strength. The depth of the abyss from which she arose was a measure of the might of her people.

* * *

The year 1709. A twelvemonth earlier, after a victorious campaign in Prussia, the invincible army of Charles XII, King of Sweden, had entered Russia. Peter I, who became "the Great," offered to sign a peace, but Charles replied that he would conclude peace only in Moscow. He felt there was no occasion to talk differently to this country after Narva, where the vastly superior forces of the Russians had ingloriously yielded the field to the Swedes.

That defeat, however, had, proved more beneficial to Russia than a victory would have been. During the eight years that had elapsed since the rout at Narva, Peter had introduced compulsory military service, trained new Russian commanders, and outfitted an army. He had even recast church bells into cannon. The genius of this man had forced the country to exert its efforts to the utmost; again its destiny was in the balance.

Now, tempting destiny, Charles was advancing while Peter, avoiding battle, was on the retreat.

On crossing the Dniéper, Charles decided to march on Moscow and through the Ukraine to replenish his commissariat. At the same time he wanted to join forces with the Ukrainian Hetman Mazeppa and cut off Moscow from its southern granary—to enrol in his service both treason and starvation.

The Ukrainians, however, had not the slightest desire to betray Moscow and refused to follow their Hetman. It was the Swedish army that starved, and not the Muscovites. The Ukrainians destroyed everything they could and resorted to guerrilla warfare against the Swedish detachments.

Charles summoned General Levenhaupt, who was then in Livonia in command of a strong detachment and a big munition train. But the Russian troops attacked him *en route* and captured all his supplies. The invading army was left without powder.

Charles, however, persisted in his plans. He did not turn back but stayed in the Ukraine throughout the hard winter, and in the spring of 1709 resumed his campaign.

In his path lay the quite vulnerable fortress of Poltava. It had a garrison of 4,000 and was supported only by low earthworks and a wooden stockade. Charles decided to storm it in order to clear his line of advance and obtain supplies.

The Swedes stormed Poltava with great valour and doggedness. Attack followed attack, and more than once Swedish standards fluttered over its walls. But the fortress held out. Whenever the enemy attacked the alarm was sounded, and the entire population, including old men and women, came armed with axes, pitchforks, scythes and spikes to aid the regular soldiers.

The siege lasted more than two months. Less than half the original defenders were left alive, and only one and a half kegs of powder remained when Peter marched into the fortress. Time had strengthened Peter and weakened Charles. Peter was now ready for the battle which he had formerly evaded and Charles had so eagerly sought.

The Russian army took up a position well inside a broad field near Poltava. The approach to this field from the Swedish positions was blocked by a series of six redoubts set up at the distance of a rifle shot from one another.

These redoubts were intended to obstruct enemy attacks, deprive them of any element of surprise, and introduce confusion into the ranks of the enemy. Peter stationed his artillery behind the redoubts, somewhat to the side, so that the Swedish troops, after breaking through,

would find themselves under flanking fire before they had time to re-form.

To all appearances the initiative rested with Charles, but actually it was in Peter's hands.

There was a regiment of untrained recruits, dressed in grey uniforms, in the ranks of the Russian army—the most vulnerable spot in the whole array. On the eve of the battle Peter learned that a Russian officer who had deserted to the Swedes had knowledge of this fact. Confident that the spearhead of the enemy attack would be directed at this weak sector, Peter ordered one of his crack units, the Novgorod regiment, to exchange uniforms with the recruits and take up their positions.

The seasoned Swedish army possessed tactical superiority, but the young Russian army was the more numerous. In order not to discourage Charles from attacking the Russian forces, Peter shifted some of the troops from the scene of battle, thereby almost equalizing the strength of the contending armies.

On the evening before the battle an order issued by Peter was read to all the troops. This historic document is known to every school-child in Russia. It reads:

“Warriors! The hour that is to decide the destiny of our country has struck. Do not think you are fighting for Peter. You are fighting for the State entrusted to Peter, for your family, for your Motherland. . . . And as for Peter, know ye that he values not his life, but only desires that Russia may live in bliss and glory for your prosperity.”

Before the break of dawn, on the morning of June 27th, Charles hurled his army against the Russians.

As Peter had foreseen, his courageous adversary did not wait to be attacked, but was himself the first to strike.

As Peter had foreseen, the Swedes spent their initial *élan* and lost valuable time breaking through the line of redoubts.

As Peter had foreseen, the enfilading fire of his artillery threw the Swedes into confusion when they finally succeeded in breaking through to the field occupied by the Russian army.

As Peter had foreseen, the spearhead of the Swedish attack was directed at his left flank, at the soldiers in grey uniforms.

The Swedish army was splendidly trained in the art of manœuvring. After hurdling the redoubts it re-formed its ranks and advanced in solid formation on the Russian lines. The King was borne ahead of his troops in a litter carried by horses. In his right hand he held an unsheathed sword and in his left a pistol. Charles had been wounded in the leg before the battle and was unable to ride in the saddle.

The Russian army advanced to meet the Swedes. Fierce hand-to-hand fighting broke out as the rival forces clashed. The Russians

were fighting for the future of their country, and the gravity of the situation reinforced their strength.

The grey-clad men of the Novgorod regiment staunchly countered the pressure of the enemy. But the Swedes were gaining the upper hand. After a furious bayonet charge they tore through the first Russian line. The front was breached. Then suddenly, at the point where danger threatened most, a horseman commanded the scene—towering of stature, thunderous of voice, black curls, and unconquerable will to victory. It was Peter. He drew his sword and plunged into the thick of the fray, sweeping the second line of the Novgorod men along with him. Peter's cocked hat and his saddle were holed, and a cross he wore round his neck was flattened by a bullet. The Russians achieved the incredible: the gap in their lines was closed and the balance of forces restored.

Intense fighting continued, the pendulum now swinging toward the Russians. Their cavalry charged the Swedish flanks. At that moment, when the first shadows of defeat were hovering over the Swedish army, a Russian cannon ball splintered Charles's litter. The horses were killed, and Charles thrown to the ground. In an instant the rumour spread through the Swedish ranks that the King had been fatally hit. Believing their beloved monarch dead, the Swedes began to fall back.

But the King was not dead. He was hoisted aloft on crossed lances, only to behold the flight of his army. He exhorted his men to return to the battle front, but it was too late.

The army of Charles XII was in part annihilated, in part taken prisoner. Only a few hundred men and the King himself succeeded in eluding capture.

Russia was saved.

After the battle was over Peter presented his own sword to the Swedish Field-Marshal, who had been taken prisoner, saying: "I wish you to keep it as a token of my admiration for your courage."

* * *

. . . The year 1812. The invincible Napoleon crossed the Russian frontier at the head of an army of 600,000 Frenchmen, Germans, Italians, Poles and soldiers of other nationalities. The world was dazzled by the glitter of his fame. All the nations of Central and Western Europe, except for the British and the Spaniards, had submitted to his might. Now he was out to force Russia to her knees.

At first the Russians adopted the absurd plan worked out by General Pfuél, a German in the service of Russia. He contemplated having two armies in the field acting separately, and engaging Napoleon in a decisive battle in the zone of the Drissa fortified camp (on the Western Dvina). That would have fitted in perfectly with Napoleon's plan. He would have liked to smash the Russian armies one by one, thus attaining speedy victory. His army was three times the size of both the Russian armies.

Pfuél's strategic plan, which would have spelt disaster for the Russians, was rejected in good time. Much to Napoleon's chagrin, the Russians commenced to retreat into the interior of the country. The Corsican pursued them.

Both Russian armies, the first commanded by Barclay de Tolly and the second by Bagration, retreated in the direction of Smolensk. Napoleon's attempt to surround and annihilate the second army was foiled by a skilful manœuvre on the part of Bagration, who broke through the enemy lines and joined forces with Tolly. The latter assumed command of the united Russian army and continued the retreat. After fierce rearguard battles he yielded Smolensk. Following close on the heels of the Russian army, Napoleon set out on the direct road to Moscow.

But the French army was being depleted by casualties, illness and desertions. It was being bogged down by the immense spaces of the country. Winter loomed ahead. The Marshals advised their Emperor to call a halt, but he was obsessed by the idea of taking Moscow.

The enemy was marching over ancient Russian lands, burning the countryside and laying it waste. The hatred of the Russian people for the invaders steadily increased. The Russian soldiers were offering desperate resistance—there were cases when officers had to use their sabres to compel their men to retreat, in line with Tolly's strategic plan. The people were clamouring for a decisive battle.

At this juncture, Tsar Alexander I, under pressure of public opinion, appointed Field-Marshal Kutuzov commander-in-chief. This wise old veteran, who had shared in the laurels of Suvorov, realized that the retreat was saving the army. He sought a battle that would preserve the Russian army and weaken Napoleon. At last he undertook such a battle. Sixty-five miles from Moscow, near the village of Borodino, the Russian army halted and engaged the enemy.

It was September 7th, 1812, when this battle, one of the most ferocious in history, was fought.

By that time the forces of the Russians and the French had been almost equalized. Kutuzov and Napoleon had a hundred and twenty

or a hundred and thirty thousand men each. In artillery the Russians were even stronger than their adversary.

At the Battle of Borodino Kutuzov was on the defensive, Napoleon attacking.

Napoleon directed his main blow at the left flank of the Russians, commanded by Bagration, repeatedly assaulting his *flèches*. The Russians, however, put up such stubborn resistance that for six hours the furious charges of the French against these unfinished redoubts proved of no avail. Bagration, a Georgian by nationality, was one of Russia's ablest generals. He repulsed all the French onslaughts with devastating effect, and himself undertook repeated counter-attacks.

The field of battle was strewn with corpses. Hundreds of guns were roaring, raising an indescribable din; earth and sky were enveloped in smoke. The *flèches* changed hands several times.

Napoleon ordered the *flèches* to be taken at any cost. With rifles at the charge French grenadiers stormed these obstinate impediments. They ran on without firing a shot in face of the murderous Russian fire. "Bravo! Bravo!" exclaimed Bagration in admiration of the enemy's courage. At that moment a fragment of a cannon ball hit the Russian general, inflicting a mortal wound. The left flank of the Russians lost its commander, in whose invincibility it had firmly believed. The French broke through and seized the *flèches*.

After the left flank of the Russians had been crushed, Napoleon hurled his forces at the centre, where Rayevsky's battery, the key to the entire Russian position, was stationed.

Again furious fighting flared up. The French captured the battery but could not hold their prize. Once more they captured it, only to lose it again.

At this point Kutuzov sent cavalry to outflank the French on their left and attack their rear. The cavalry charge was repulsed, but it prolonged the life of Rayevsky's battery. When the threat of being outflanked was eliminated, Napoleon again concentrated on the battery. It was made the target of almost the entire French artillery. Its gallant defenders were wiped out by cannon ball and bayonet, and finally it fell to the French.

The day was beginning to decline—it was already past three—but to the amazement of Napoleon, that spoiled favourite of fortune, the Russians did not run. They would fall back a bit, halt and continue to fight.

At this critical moment, the French Marshals begged Napoleon to throw his untouched reserve, the Old Guard, into the battle; but

he refused, fearing to take the risk. Gradually the fighting simmered down.

The battle was indecisive. The French had advanced but had gained no victory. The Russians had been forced back, but they were not defeated. "The French showed themselves worthy of victory, while the Russians showed themselves worthy of being unvanquished," was the verdict of Napoleon.

Kutuzov announced to the troops that the battle would be resumed in the morning. But the tally of losses counted that night showed that half of the Russian army had been killed. Kutuzov ordered a retreat. The French again followed on their heels. But the fate of Moscow was sealed. Kutuzov gave up the city to save his army.

Napoleon waited all day before the gates of Moscow, expecting a delegation from its population to bring him the keys of the capital. But no delegation arrived. The Russians did not present their capital to Napoleon on a platter; they chose to set it on fire.

On September 14th Napoleon entered Moscow. Once within the deserted city, and as he watched its destruction by fire, he could not but realize that the French army had been struck a mortal blow at Borodino. Its forces were exhausted and its morale undermined by looting and marauding. There was a shortage of food and winter was coming on.

Three successive offers of peace were sent by Napoleon to the Russians, but no answer came. On October 19th, 1812, Napoleon left Moscow. In heading back to Smolensk he decided not to follow the old route, emptied of provisions by his own depredations, but to take a new one *via* Kaluga.

Accompanied by thousands of carts laden with loot, Napoleon's army set out for that city, only to be met by Kutuzov's men. After leaving Moscow to the French, the far-sighted Russian army leader had executed a splendid manoeuvre: He made it appear as if he were retreating to Ryazan, but in reality by a covert flanking march he turned to the south-west of Moscow and took up positions at Tarutino, on the Kaluga road. There Kutuzov replenished his army and prepared it for the winter. His restored forces blocked the progress of the French along this road.

Napoleon's attempt to break through to Kaluga ended in failure; he had to make the best of the road by which he had come.

Now Kutuzov was the pursuer. Cossacks and peasant guerrillas finished off or took prisoner many a hungry, frozen and exhausted soldier of the Emperor of France.

The *Grande Armée* was doomed. The Russian people, seething

with hatred and thirsting for vengeance, were hacking its miserable remnants to pieces as they drove it from their land.

The ruler of a vast empire, one of the greatest army leaders of all times and nations, brought to Russia an army of 600,000; half a year later a bare 18,000 ragamuffins made their escape across the border.

Denis Davydov, founder of the first Russian guerrilla detachment, jotted down the following entry in the notes he took during the pursuit :

"The piles of carcasses of men and horses, and the innumerable carts and gun-carriages hardly left room for me and my men to ride through; enemy soldiers, still alive, lay sprawling in heaps on the snow, or had climbed into carts there to await death from hunger and cold. The road was lit up by blazing cottages in which hundreds of these unfortunates were burning. The runners of my sled hit against the stiffened heads and limbs of men already frozen or freezing to death, and my passage was made to the accompaniment of the lamentations of these sufferers in different dialects. . . a delightful hymn of liberation for my country."

* * *

. . . The year 1919. Autumn. This is the most crucial moment in the Civil War which has enveloped all Russia; the enemies of the Revolution have occupied the Ukraine, the Caucasus and Siberia. Hunger and ruin stalk the land. General Denikin has defeated the Soviet troops and is swiftly advancing on Moscow from the south.

On October 13th Denikin's army captures Orel. Picked White units, one-third of which consist of regular army officers, are pushing on to the capital. Advance cavalry units make their appearance near Tula.

Soviet Moscow and the Soviet Revolution are in deadly danger. The country is turned into an armed camp. At Lenin's call tens of thousands of citizens take up arms and march off to the front. And then, as always, Lenin sends Stalin to the sector where the danger looms greatest.

Stalin was in direct charge of the uprising in Petrograd in October, 1917. Stalin defended Tsaritsyn; Stalin stopped Kolchak at Perm; Stalin hurled Yudenich back from Petrograd. Now too Stalin is sent to save the Revolution.

He finds the southern front in a state of collapse. At headquarters great laxity prevails; traitors and incompetents are in commanding positions; the army is on the retreat. This is the handiwork of Trotsky, commander-in-chief at that time.

Under these severe handicaps Stalin sets to work. His first demand is that Trotsky be forbidden to meddle in the affairs of the southern front. That demand is granted.

Then, while conducting a difficult retreat, Stalin undertakes the stupendous task of bringing order into the disarray of the army. The army staffs are whipped into shape and fighting efficiency is restored.

Next Stalin selects the direction for his main drive. He rejects Trotsky's plan of attacking the Whites through the Don steppes, along the line Tsaritsyn-Novorossiisk; in effecting this plan the revolutionary troops would have to operate on hostile territory, as the Don steppes are a hotbed of counter-revolution, inspired by the rich peasants. Stalin chooses a route that will take him to Rostov *via* Kharkov and the Donetsk coal basin, an industrial area in which the population is in sympathy with the Soviet Republic. Moreover, by striking at Rostov the Red Army will be splitting Denikin's forces in two, and will obtain the benefit of the dense railway network and rich coalmines of the Donetsk Basin. Stalin's strategic plan is fully endorsed by Lenin.

Now everything is set for action. It begins with Stalin's order: "Not one step back!" By a superhuman effort the famished, poorly armed and poorly clad revolutionary troops of blockaded Soviet Russia stem Denikin's officer divisions on the roads leading to Tula. Stubborn and bloody battles follow.

A brilliant general and an heroic army! On October 20th Soviet troops capture Orel by a swoop from the north. By a blow from the north-west the Red Army, after fighting which lasts for sixteen days, smashes Denikin's men at Kromi. A sweeping charge from the north-east executed by the young Soviet cavalry results in the capture of Voronezh and Kastornaya. A triple blow of crushing effect. Denikin's troops are beaten and on the run, pursued by the Red Army as far as the Black Sea.

Soviet Russia is saved.

* * *

Our country has seen evil days. Terrific storms repeatedly have shaken the Russian oak, almost toppling it over, threatening to uproot it. Cities have gone up in flames, women have prayed, children have wept, men have fought and died for their country.

Not a century but brought its threat of doom. These trials hardened the people, steeled their spirit. What seemed certain disaster passed and vanished: The frenzied fury of the Teutonic Sword-

Bearers, the oppressive burden of the Tatar yoke, the hopelessness of the Time of Troubles, the mighty impact of Napoleon's onslaught. Our great people rose to each emergency.

Our country has seen evil days, but none so evil as those of the fascist invasion. Never before have we been faced with such a formidable foe—the German *Wehrmacht*, the strongest army in the world, plus Hitler's obedient vassals, the Italians, Finns, Rumanians and Hungarians, all equipped with the latest engines of war and impelled by bestial fury, proclaiming the motto "We shall destroy Russia, and never shall she rise again!"

Late autumn of 1941. Where was our brother Byelorussia, where the thriving Ukraine, where was hoary Novgorod, where Smolensk, the sentinel of Moscow? The capital itself was gripped by the pincers of the Nazi tanks. The Germans were siting gun positions, preparatory to shelling Moscow. They were getting ready for the kill.

Our country has seen evil days, when national extinction seemed inevitable; but each time the Russian people have summoned the necessary power of resistance. Will they be able to summon sufficient strength now, at this fateful hour, to crush the fascist viper?

CHAPTER IV

ENERGY

On came the Germans. They not merely seized our territory; they destroyed our industry and agriculture, the material foundations of our life.

We had planted grain—it was trampled underfoot, or reaped and shipped to Germany. We had built factories and mills—they were burnt down, their machinery smashed, and whatever works we did not succeed in evacuating and were not destroyed in the fighting fell into the enemy's hands and were transplanted to Germany. We had laid railway lines; they were torn up to be relaid to match the narrower German gauge.

It is a monstrous injustice to break into a land of a peaceful neighbouring people and rob it of the fruit of its toil. But let us not be naïve; war has no room for remonstrances. We faced a concrete problem; how to carry on despite these losses, how to replace them. And we had indeed lost very much.

Russia grew from west to east, somewhat as the United States grew from east to west. The hub of our country was in the West, and there our economic might was concentrated.

For centuries we had been expanding eastward, crossing the Volga, the Ural Range and the Ob. The East we gradually settled and made habitable, but our main interests were, as before, in the West: Moscow, Leningrad, the Ukraine.

The economic centre of our country was not its geographic centre but a point further west. And precisely the West was being overrun by the enemy.

The fertile steppes of the Ukraine were solidly sown to grain. Its tillage exceeded the total area of Italy or Rumania. The Ukraine produced meat, fats and butter in large quantities, and contributed three-quarters of the country's sugar. And now the Ukraine lay devastated.

The Ukraine produced more than half of the country's iron ore, pig iron and steel. And now the flow of Ukrainian metal ceased.

Half of the country's coal was mined in the Donetsk Basin. These fields sent fuel to Moscow and Leningrad, and to towns in the Volga area. And now the Donbas was out of the race.

Since time immemorial Tula had armed all Russia. And now the Germans gripped that city in pincers, and its workers were in the trenches instead of in the arsenals.

Leningrad manufactured the finest and most intricate machinery in the country. And now Leningrad was besieged.

Moscow was the country's biggest industrial city. Its annual output before the war exceeded that of all of tsarist Russia. It sent automobiles, machinery, instruments, textiles and chemicals to all corners of the land. And now the enemy was at the gates of Moscow. . . .

Enormous losses.

Much was wiped out by the wheels of the modern juggernaut, much was destroyed by ourselves, the Russians.

The Russian says; "In a fight you don't cry over pulled hair." When battling in a righteous cause the Russian forgets all but the fight.

Fire swept over the fields where the grain already stood high. Factories, bridges and railways blew up into the air. Water flooded the mines.

The entire country had tightened its belt to build the famous power station on the Dnieper, the largest in all Europe. That was under the first Five-Year Plan, when we were still shackled by our backwardness. All the greater was our pride in its completion.

An arc-shaped concrete dam half a mile long cut across the mighty Dnieper and raised its waters over one hundred feet, submerging the rapids, opening a shipping route between Kiev and the Black Sea, and harnessing the river in turbines to produce cheap and abundant energy for new industrial plants and growing towns. The Dnieper hydro-electric station did the work of ten million people. During our retreat in the summer of 1941 our sappers blew up this dam. What must have been their feelings at that moment?

To destroy is simple; what the country had built in five years of strenuous effort was demolished in an instant. A charge of ammonal—that's all. To salvage, to preserve, was by far the more difficult job.

It was evident that without creating a new and powerful war industry in the East we would be unable to continue the war and all would be lost. It was imperative that in the space of several weeks, or at most, months, industry had to be shifted thousands of miles east, further into the interior of the country, and there set going again.

Thus, the people in the rear were faced with a task no less stupendous than that of the men at the front.

To accomplish a job of such magnitude the people had to possess inexhaustible energy, unflagging perseverance, indomitable industry, ability, and a pluck that could sweep aside all obstacles. Could the Russian people cope with a task of such colossal scope?

* * *

The Russian people looked back.

Who are we? What have we accomplished in the course of our history? Are the Russian people endowed with creative genius?

The Slavs, who in the dark, uncharted recesses of history were distant cousins of the Scythians, were known to Roman and Greek historians—Pliny, Tacitus and Ptolemy—during the first centuries of our era as a "great people" inhabiting the illimitable spaces of Eastern Europe. When they grew stronger they menaced Byzantium just as the Germanic tribes menaced Rome. According to non-Russian authorities, the Slavs were a tall, sturdy, courageous, freedom-loving people, "who could in no way be made amenable slaves."

The eastern branch of the Slavs gave rise to the Russian people.

It is evident from recent archaeological investigations that since time immemorial that important centre of civilization, the region of the Dnieper, has been inhabited by Russian Slavs. This district lived through a short spell of Gothic domination after which it was swept in rapid succession by turbulent but passing waves of Huns,

Khazars, Petchenegs and other peoples coming from the open expanses of the Black Sea steppes.

The Russian Slavs exchanged the wooden hoe for the wooden plough, grew grain and stock, hunted animals for their furs and collected wild honey. As the tribal system disintegrated, private ownership of land appeared, and the Slavs gradually formed States.

In the ninth century Germany, Italy and France were rising in Western Europe on the ruins of the empire of Charlemagne. Kievan Rus at this time was coming into existence in Eastern Europe on the territory occupied by the thriving commercial centres along the Dnieper.

Kievan Rus, a feudal state, was one of the most powerful political entities of Europe. Situated between two fires—the Norsemen in the North and the nomads in the South—the Russian Slavs succeeded in setting up a vast state extending from the Gulf of Finland to the Black Sea, and from the Carpathians to the Volga. In their military raids southward they reached Constantinople and there were times when they dictated their terms to the Byzantine Empire; in the west they crossed swords with the Poles and Germans; in the south-east, Russian military bands reached the Caspian Sea and, proceeding along the Kura, penetrated deep into Transcaucasia where they clashed with the Arabs. These battles moulded and hardened the character of the Slav warrior, expressed a thousand years ago in the call to arms issued by Prince Svyatoslav at a trying moment in the history of his country: "Let us not put the Russian lands to shame but rather lay down our lives, for the dead know no shame. . . ."

Kiev traded with Byzantium, with the Arabs of the East, with Scandinavia, Venice, Bohemia, France and Germany. Western Europe regarded Kiev as next in importance to Constantinople, the capital of Byzantium, and in those days no country exceeded Byzantium in wealth or culture.

The emperors and kings of Western Europe sought intermarriage with the ruling dynasty at Kiev. For instance, one of the daughters of Yaroslav the Wise married the French King Henry I; a grandson of Yaroslav, Grand Prince Vladimir Monomakh, married a daughter of the English King Harold.

Christianity spread to Kiev from Byzantium, whose high culture it introduced at the same time. Cities were decorated with stone cathedrals, of an architectural style that combined native elements with Byzantine, Transcaucasian and Romanesque influences. Splendid books were written, in parchment manuscript. Education began to spread among the upper strata of society; Grand Prince Vsevolod, for example, knew five languages. Epic poems that have come down to us speak of those days as an age of power and glory.

When the world stood at the threshold of the second millennium, Kievan Rus reached the zenith of her power. But then she began to decline. At the level of economic development prevailing in those days, the huge empire could not operate as an economic unit and could not possess the requisite cohesion. Further economic development brought fragmentation under feudal princes, a separation of different territories under the state. There followed endless internecine strife among the princes. The life of the Russian Slavs, launched so auspiciously on the broad highway of progress, dwindled to a drab existence.

Kievan Rus might possibly have overcome this period of dissension and weakness, so natural to feudal society, and might then have advanced to a higher plane, recovering her ancient glory. Perhaps continuity of power might have been maintained and the Eastern Slavs would not then have had to yield, even for a time, their place among the foremost states of Europe. The entire history of Europe would then have taken a different turn.

But this did not happen. While she was united, Kievan Rus managed to cope with the disadvantages of her position; the vicious onslaught of Asiatic nomad tribes passing through the Black Sea steppes broke against this mighty fortress. But split-up Kievan Rus could not hold out for long. Tottering, she still attempted to throw herself protectingly across the gates of Europe, flung open by the wild winds blowing from Asia; but her strength failed her and she succumbed in the struggle.

In 1169 Kiev was dealt a blow that greatly sapped its strength, a blow inflicted by a Russian, Andrei Bogolyubsky, Prince of Suzdal, who laid waste the lands of Kiev in the course of feudal strife. In 1240 the *coup de grâce* was delivered by the Tatar Khan Batu, who razed the city to the ground.

We Russians, beaten and ravished, had to start many things anew. . . . The easy, direct path had been blocked. We had to cover a long, hard and circuitous road to regain our place in history.

* * *

The weakened, diminished forces shifted their centre of concentration.

With the disintegration of Kievan Rus the Eastern Slavs gradually broke up into three closely related peoples. Some moved west, from the devastated southern steppes to the foothills of the Carpathians, advancing as far as Cracow, and, forming the principality of Galicia

and Volhynia, were for a long time drawn within the orbit of Poland. In the north-west, along the Pripet River, arose the Byelorussian people, whose lands soon came under the sway of Lithuania. And that part of the Eastern Slavs which drifted to the north-east, where they assimilated many small tribes akin to the Finns, formed what came to be called the Great-Russian people, the inhabitants of Russia proper. This was the people upon whom devolved the task of reuniting the Eastern Slavs in a single powerful State.

Slavs had inhabited the north-east of Europe, the vast forest area around the upper reaches of the Volga, even before the downfall of Kievan Rus. Novgorod, on the Volkhov, is one of the oldest Slav towns. Rostov, situated between the Volga and the Oka rivers, was probably established around the ninth century. The Slav settlement of the north-east was accelerated by Kiev's decline and fall.

In the open lands of the South, Slav villages were being devastated and burned year in and year out by wild marauding hordes. The Asiatic invaders took brutal delight in hitching captive Slav women to their itinerant carts. Little by little the people left their ancient homes, the fertile lands of their fathers, to seek refuge in the North, beyond the Oka, behind the protective belt of forest. To this cold, wooded and marshy district they brought their love of farming. On the banks of the Klyazma River, between the Oka and the Volga, there is a small stretch of black earth almost totally devoid of forests. This area was the first to be settled. It became the site of such towns as Suzdal and Vladimir, whose several rulers took over from Kiev the title of Grand Prince. When there was no more room here for settlement, the newcomers entered into a protracted struggle with nature.

Travelling in small groups, on boats that were nothing but hollow tree-trunks, they made their way along the rivers, penetrating deeply into the forests. There, on the steep right banks, they hewed down the timber to build their log cabins and make room for their ploughlands. The axe became a national implement. Forests were burnt or cut down and the stumps uprooted. The land thus cleared was fertilized by the ashes and made to yield grain year after year until it was exhausted, when a new section of the forest had to be cut down and uprooted or burnt.

Forests—dark, damp, impassable, the haunts of wild beasts—hemmed in the settlers like a stockade. Swarms of mosquitoes made life miserable. Crops perished from frost or excessive moisture; time and again the settlers starved.

But their enemy, the forest, receded step by step. With proper cultivation the soil became more fertile. Roads made of planks were

laid across the swamps; the land was gradually drying. More and more villages sprang up, while the towns spread out as their populations increased. Rus was being built up by the back-breaking, exhausting toil of her persistent and patient people. The Russian character is a product of this history.

* * *

The prodigious creative effort of the Russian people cleared a new homeland for themselves. And then, when economic development and growing trade relations held out hope of mitigating the results of the dismemberment of the feudal state, a new disaster supervened. Like a devastating tornado the Tatar invasion that swept over Russia in the thirteenth century reduced to rack and ruin all that had been built up with such colossal toil.

The amazingly staunch resistance of the Russians proved of no avail. For two and a half centuries unfortunate Rus was to bear the horrible oppression of the Mongol-Tatar yoke. The Russian people received the full impact of the blow. When these savage hordes, weakened by the resistance of the Russians and diverted by the booty they had captured, penetrated into Central Europe, the heroic Czechs put a definite stop to their further advance.

Fettered by the Tatars, Russian economy and culture lagged behind the West, where conditions for their development were incomparably more favourable. European culture was enriched by the culture of Rome; Russian culture, on the contrary, lost much of what it had already achieved. Masonry disappeared from our architecture for an entire century. Valuable cultural memorials were lost in the bacchanalia of destruction that characterized Tatar rule. Heavy tribute drained the country dry.

There might have been grounds for apprehension that the protracted Tatar rule would affect the character of the Russian, make him spineless, lessen his personal dignity, lower his morale. But love of freedom was too deeply rooted in his heart.

The development of production and the social division of labour were bound to be followed by a process of consolidation in Russia. Much impetus was given to this process by the struggle of the Russian people for their national emancipation, since this struggle was impossible without political unity.

In those days of great adversity the Russian people found the strength not only to fight back but to gain victory. They surmounted

all obstacles—cut short the German expansion in the East, created a centralized Russian state and cast off the Tatar yoke.

* * *

The consolidation of the forces of all Rus centred in Moscow.

The first mention of Moscow is found in the annals of the year 1147. At first it was only a tiny log-cabin settlement on a hill at the point where the Neglinka flows into the River Moskva. Then followed years of unusually rapid rise, dictated by historical necessity.

Moscow lay along important water and land routes, in the heart of Rus, protected by dense forests. The princes of Moscow succeeded in obtaining from the Golden Horde the right to collect the Horde's tribute from all the other Russian principalities. The Moscow princes won the consent of the Metropolitan, the head of the Russian Church, to establish his residence in their capital. Persistently and energetically, the princes of Moscow steadily extended their dominions.

At the end of the thirteenth century Moscow was still the capital of only a tiny principality, one of the many such existing in Rus at that time. At the beginning of the fourteenth century Moscow made its first acquisitions. It annexed Kolomna, a town at the mouth of the Moskva River, as well as Mozhaïsk, on its upper reaches. Thus, Moscow became mistress of all the land along the river. Then, by force, threat, cajolery, guile or purchase were added Uglich, Galich, Murom, Suzdal, Novgorod, Tver and, at the beginning of the sixteenth century, Ryazan and Pskov. Two centuries sufficed to consummate the unification of Rus. In place of the former independent principalities, fighting among themselves, there appeared a single national Russian state.

The process of abolishing the petty feudal principalities and of creating a feudal monarchy could not have been so swift if the individual economies of the several petty states had not become interwoven into a single economic fabric. Who laid this economic foundation? The Russian people, their labour, their energy.

Ploughlands made ever greater inroads into the forests. Instead of constantly abandoning exhausted ploughlands and replacing them by new clearings, the peasantry adopted three-field crop rotation. Bog-ore was being smelted in the newly built furnaces of the North, and salt was being refined. Artisans multiplied in the towns and villages, producing at first for the household and later for the open market. A Russian currency system came to be established. A native culture arose. Trade developed. Moscow became a great market. Streams of goods flowed into the city from all corners of

the land—grain was shipped from Ryazan in the South, furs and silver from the coastal regions, the Dvina and the Urals in the North. The country embarked upon trade with distant lands. The Republic of Venice sent cloth and elaborately worked arms through the Crimea in exchange for Russian raw materials; silks and other luxuries arrived from Eastern Asia by way of the Volga.

United in the pursuits both of peace and war, Muscovite Rus discomfited the Tatars in 1380 on the field of Kulikovo. After another one hundred years of national development, in 1480, the Tatars showed the white feather and declined battle with the Russians. At last the heavy yoke of oppression was cast off by the vigorous young state.

A vast, powerful and independent Russia was growing up in the East.

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Muscovite Rus began to conduct herself as an equal in dealing with the Sultan of Turkey, the Pope of Rome and the King of Poland. Thinking to conciliate a possibly useful ally, the German Frederick III offered the Russian Ivan III the title of King. Europe had realized Russia's strength. Ivan III proudly replied that he required nobody's endorsement. Russia had realized her own strength.

Ivan IV (the Terrible) deprived the feudal Boyars of their power in favour of the rising nobility, thus strengthening the authority of the central government. In its development the Russian State stepped beyond its national bounds, absorbed other nationalities and became a state of many nations. In the middle of the sixteenth century the territories of the Tatars and Chuvashians along the Volga, and of the Bashkirs and Udmurts at the foothills of the Urals, were annexed. The penetration of the North Caucasus and Siberia began. Muscovite Rus was constantly expanding.

The expansion was mainly eastward. In those days a third of the state revenue was derived from furs. Sable, squirrel and fox skins were the main items of Russia's growing export trade. In 1553 a British expedition, headed by Willoughby and Chancellor, set out in search of a northern passage to China. A storm in the Barents Sea scattered their ships, driving Chancellor's vessel into the mouth of the Northern Dvina, where the bold navigator landed. The discovery of this trade route to Muscovy was one of the early naval achievements of the British. The captain was presented to Ivan the Terrible and Muscovy became accessible to merchantmen through the White Sea, trading first with Great Britain and later with the other countries of Europe. A "Muscovy Company" was established in England.

The Russians went into Siberia in search of furs. Furs were to the Russians what gold was to the Spaniards.

In slightly over half a century the Russians crossed Siberia from end to end, traversed the whole of this immense land so devoid of roads, stretching from the Urals to the Pacific, equal in area to thrice Western Europe, a land of primeval forests, picturesque mountain ranges and broad rivers, where climates reach their coldest and where soil is eternally frozen.

Cossack detachments blazed the trail. They built fortifications, levied tribute from the native population and cleared the way for future settlers. Agriculture was introduced beyond the Urals, mines were sunk in the Trans-Baikal region. Wild Siberia was opened up to trade, was elevated to a higher level of economy and culture.

Indefatigable land travellers, whom the Chinese called "bold as tigers," the Russians persistently made their way from one river to another, crossing the Ob, then the Yenisei, then the Lena. Yermak crossed the Ural Range in 1581 and in 1643 Ryarkov journeyed across the mountains from the Lena to the Amur, sailed to its mouth and returned west *via* the Okhotsk Sea. He had covered some 4,500 miles, having spent three years in unknown lands and lost almost all of his companions, victims of battle and privation. In 1648 some Russians reached the easternmost point of the Asiatic mainland. Defying storms and floating ice, in a small, unseaworthy ship, the Cossack Dezhnev sailed for several months along the coast of the Arctic Ocean until he discovered the straits separating Asia from America. He was the first European to make this passage. But, although his discovery was one of the greatest in geography, it became known only one hundred years later.

The Russians had reached the shores of the Pacific. Yet the ocean was no barrier to their further progress. They colonized the shores of Alaska and, moving southward along the American coast, built towns as far down as the present site of San Francisco.

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While expanding to the East, Russia was hard pressed in the West. The Polish, Lithuanian and Swedish incursions at the beginning of the seventeenth century brought the country to the verge of disaster. Everything was lost in the turmoil of the Time of Troubles; the capital, the government, the treasury, the armed forces—everything except the national consciousness of the people. And in a supreme patriotic effort the people saved their country.

The great love of country manifested in these days of trial and distress by the Russian people was all the more amazing since the development of serfdom in Russia had brought with it increased hardships for the common people.

There was a reverse side to the might of Muscovite Rus. As commodity production began to play an increasing role in the national economy, the landed proprietors, the nobility, had ever greater need of money, to secure which they tightened the screw on the peasantry. The peasant was now attached to the land by law. Peasant uprisings, which from time to time assumed the proportions of peasant wars, were brutally suppressed and the people continued to languish in poverty.

Cultural advance was exceedingly slow in Russia, the country being far behind Western Europe. Literacy was at a very low level. The first Russian printing shop was burned down by an ignorant mob which regarded it as the handiwork of the devil. The people lived in filthy, smoke-filled huts; entire townships would be wiped out by epidemics. People walked about in ill-fitting, heavy garments, the men with wild beards. Corruption, torture and despotic rule were the hallmarks of the judicial system. The Church, which at the dawn of the Russian State had promoted enlightenment, now became the mainstay of obscurantism.

Russia was paying the price for the centuries of Tatar oppression, for the centuries of isolation. The direct route to Western Europe was shut tight. The shores of the Baltic Sea belonged to Livonia, which strenuously blocked all Russian egress. In the sixteenth century Russia, in an effort to break through to the Baltic, defeated the Livonian Order of Teutonic Knights. But Sweden, Denmark, Poland and Lithuania joined the war against her, and the unequal contest at once revealed not only the cultural but also the technical superiority of the West.

In those days the country had almost no large workshops or factories. The Time of Troubles and the growing burden of serfdom had depopulated almost half of Russia's villages. In the contest of ploughland against the forest the latter was again gaining the upper hand.

Had this continued, had Russia persisted in her patriarchal backwardness, she would inevitably have been turned into a colony of Western Europe, and been relegated to the lumber room of history. . . .

But again the country went forward.

At this critical point in history Russia acquired a real leader—Peter the Great. With a mighty hand, "stopping at no barbarous means in the struggle against barbarism," he lifted Russia out of her

rut and at once secured her a place among Europe's most powerful countries.

As if by a miracle, the stagnant air was suddenly charged with energy. Such was Russia's historic destiny. This concentrated energy did not drop from the sky as a gift; it was generated by Russia herself.

Russia was driven forward by a whirlwind of construction. Dozens of workshops were built to produce woollens, sailcloth, linens and other manufactures. The Ural iron and steel industry, utilizing the charcoal and rich local ores, swiftly rose to prominence, overtook the British and captured first place in Europe. Tens of thousands of people were engaged in the digging of canals and in the building of cities. Foreign craftsmen and scientists were invited to Russia to aid in the training of native craftsmen and scientists. The townfolk adopted European dress. The first schools were set up, the first textbooks published, the first newspaper issued. A fleet was being built at a feverish pace. A new army was being hammered into shape. The might of the independent Russian State was rising by leaps and bounds.

This kaleidoscopic development provided a firm foundation for Russia's splendid break-through to the Baltic, the gateway to Western Europe.

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The carpenter-tsar, the bombardier-tsar, led the Russian people against both the marshes of the Neva, and against the armies of Sweden. But the people groaned under the heavy burden. While reconstructing Russia Peter left intact the main standby of her economy, serfdom. The oppression of the people increased, as Peter's reforms required enormous sums of money. Hardly anything was left untaxed, not even the sale of dill pickles, the sharpening of knives, and the wearing of beards. The state of the landlords and merchants was thriving, but its exactions exhausted the strength of the labouring masses.

During the age of Catherine II Europe was amazed by Russia's wars and victories which greatly enlarged her territory. In the course of the Seven Years War Russian troops captured Berlin (1760), causing Frederick the Great to exclaim: "Russia is a terrible force." The keys to Berlin are kept to this day in one of the Leningrad museums. Headed by the invincible Suvorov, Russian soldiers crossed the Alps despite incredible difficulties (1799), winning the admiration of all Europe by the staunchness of their spirit.

But at the time when Europe became the arena of bourgeois revolutions the first shoots of industry were still only sprouting in Russia, side by side with medieval serfdom. The landlords forced the peasants to till their master's fields from three to four days a week. They had the right to whip their serfs and to sell them as their chattels.

How great, then, must have been the patriotism of the oppressed and downtrodden people when they could rise to a man in defence of their country in an hour of trial and smash the invading army of one of history's most brilliant generals. But the victory over Napoleon did not alleviate the lot of the people. Moreover, this victory enabled Russian tsarism, which at the end of the eighteenth century had developed into a brutal reactionary force, to assume the role of *gendarme* of the whole continent of Europe.

The peasants had to bear the heavy yoke of the landlords, the arbitrary rule of the government officials and the legalized robbery of the merchants. The most odious were the "Russian Germans." It is an established fact that foreign hirelings have always been the best servants of reaction. German barons from the Baltic, descendants of the Livonian knights, who despised the Russian people, wormed their way into the government apparatus of Russia, where they promoted the reactionary policy of the autocracy. The steady process of Germanization in the ruling Romanov dynasty was furthered by the use of marriage for purposes of state; almost all the Russian sovereigns of that period were wedded to German princesses.

But nothing can halt history. At the end of the eighteenth century the feudal foundations of Russia began to disintegrate. Serfdom strait-jacketed the creative powers of the people. The cheap but unproductive labour of the serfs hindered the development of machinery. Throughout the first half of the nineteenth century crop yields remained at the old low level. The slow expansion of the home market hampered the growth of industry. During the first half of the nineteenth century production of pig iron hardly doubled in Russia, whereas in England it multiplied almost thirty times over. The peasants were rebellious, but their movement of protest did not assume the dimensions of a revolution. A people which for hundreds of years had languished in serfdom could not launch a sweeping, open, conscious struggle for freedom. Writers, educators and popular leaders who championed the people's emancipation perished in dungeons and in exile.

The tsars brought Russia to an impasse. The loss of the Crimean War in 1856 sounded an ominous warning.

In 1861 serfdom was abolished in Russia, and at once an industrial boom set in. A textile industry grew up in the area round Moscow, taking its start from the small handicraft workshops located there.

Machine-building and light industry developed in the western ports of St. Petersburg, Reval and Riga. The building of railways facilitated the development of a large-scale iron and steel industry in the Ukraine. In Transcaucasia, Baku leaped into the limelight; at one time it contributed half the world's output of petroleum. Large-scale farming, operated on business principles and employing hired labour and machinery, swiftly spread in the steppes of the Volga, North Caucasus and Siberia. Central Asia was incorporated in the Russian Empire and turned into a cotton-producing colony. The constant territorial expansion had increased the area of the Russian Empire to over 8,000,000 square miles. No other people on the globe, except the British, had built up so vast an empire.

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One might have thought that at last the country was thriving, and its people advancing. But closer scrutiny would have revealed that the rather rapid economic development of the borderlands was accompanied by national oppression and a extravagant waste of natural resources. The national economy was being developed extensively rather than intensively. By brutally exploiting the workers, who were deprived of almost all human rights, industry was gradually gaining in strength, but at the same time it was becoming more and more dependent on foreign capital. Rich peasants, known as kulaks,¹ made their appearance in the villages, but this involved the impoverishment and growing land hunger of the masses of the peasantry.

Taking its cue from Prussia, the government of the autocracy and the landlords so arranged things that on the abolition of serfdom the peasant was not only relieved of his dependence on his landlord, but also of much of the land which he had formerly been able to use. The manifesto on the abolition of serfdom opened with the words "Make the sign of the cross, Russian people . . ." but the people fell into even more oppressive bondage. Redemption payments for the meagre land allotments they received and exorbitant rents for additional land required for mere subsistence doomed the peasant to eternal poverty. The village was chained to a medieval order of things, and was a brake on the development of the cities. Due to the survivals of serfdom Russia remained a backward, agrarian country.

¹Kulak- "a fist." The name came from the tight-fistedness of these rich peasants.

In 1904 Russian tsarism started a war with Japan, in which it suffered defeat. We were a backward country and the disgraceful Tsushima disaster was the penalty we had to pay.

Then came World War I. The Russians were hard pressed. But they not only stemmed the onslaught of the Germans but at enormous sacrifice rushed to the aid of their Allies when the latter were pushed to the wall. Tens of thousands of picked Russian soldiers were dispatched to France. The Russian offensive in East Prussia in August, 1914, deflected part of the German forces from the West and was instrumental in bringing about the Allied victory in the Battle of the Marne. Paris was saved at the price of two Russian armies which, though not fully prepared for action, were hurled against the Germans at the crucial moment. In June, 1916, Brusilov's offensive in Galicia helped the defence of Verdun and saved Italy from a débâcle.

But World War I disclosed to the full the backwardness of tsarist Russia. Her industry was totally unable to cope with the demands of the war, so that the army was short of rifles, shells and other munitions. Considerable arable land remained unplanted; the transport system was constantly breaking down. The war brought in its wake complete economic prostration.

Only the people could save Russia. And when the decisive hour arrived the inherent energy of the Russian people burst into the cleansing flame of the Revolution.

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The Revolution headed by Lenin and Stalin triumphed in October, 1917. The people took power into their own hands, and began a new life, a life based on new, Soviet, principles.

The aim of the Revolution was the happiness of the people. To attain this goal social justice was essential. But this alone was insufficient. The productive forces of the country had to be developed, so as to provide in abundance everything required by man and, first of all, to ensure the country's independence.

Industry was reduced to a state of almost complete collapse by the war and foreign intervention, so that in 1920 the index of industrial output dropped to 13, taking 1913 as 100. We Russians were faced with a gigantic task; in alliance with the other peoples of Russia, to build up in our ruined country, in the shortest possible time, a national economy sufficiently powerful to enable us to ward off all attempts of foreign aggressors to encroach upon our territory.

We had to get on our feet in time, no matter what the cost; otherwise everything would have been lost—our Motherland, the Revolution, the people and their happiness.

The people stinted themselves in everything to carry out this job. They followed a scientifically worked-out plan, which specified in substance that the work of decades had to be accomplished in a few years. All realized that this had to be done to avoid being crushed and annihilated.

The first task was to install modern means of production in every branch of industry and agriculture and to learn how to operate them.

Modern machinery and newly trained personnel had to be employed, to tap new natural wealth and increase output many times over.

The eastern regions, located deep in the interior, far from the frontiers, had also to be developed.

The problem in essence was to build up in a minimum space of time, on a vast territory occupying one-sixth of the earth's surface, a new country based on new principles, a country strong enough to resist all attack. History never set a task of such immensity before any other people.

* * *

For the Soviet Union to be able to stand on her own feet it was essential, first and foremost, that she manufacture her own machinery.

In tsarist Russia the machine-building industry was poorly developed. The country manufactured its own locomotives, but they were of low capacity. It built its own steamers, but their engines, for the most part, were of foreign make.

In the U.S.S.R. the machine-building industry developed more rapidly than all other industries. The country began to manufacture many things it had never produced before, such as automobiles, tractors, harvester combines, aircraft, electrical generators, blooming mills, machine-tools and diverse instruments and appliances, even equipment for exploring the stratosphere. Soviet workmen and engineers learned to build and run every sort of modern machine, however complicated.

In the course of the Five-Year Plans modern works producing all types of machines were built not only around Moscow and Leningrad and in the Ukraine but also in the Far East.

In former times the Ural Region used to send the metal it produced to other regions, there to be converted into machinery. During the years of industrialization under the Five-Year Plans (1928-41) this

region began to produce its own machinery made from its own metal. A modern machine-building industry came into being in the Volga Area and in Siberia. Deep in the primeval taiga and amidst the desolate steppes arose huge concrete factories equipped with the latest types of machinery, the best products of world engineering. Men who but recently had known only how to wield the hoe and scatter seed by hand now learned to measure, turn, shape and drill metal blocks into machines.

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To produce the machines metal was wanted.

Pre-revolutionary Russia imported part of her iron and steel requirements. The U.S.S.R. supplied its needs by multiplying the output of pig iron and steel several times over. Many new plants were built. They contain the biggest blast furnaces in Europe, blooming mills, and the first slabbing mill in Europe.

Prior to the revolution all Russia depended on the big iron and steel industry of the Ukraine, which smelted three-quarters of all the pig iron produced in the country.

The production of metal in the Ukraine rapidly increased during the Five-Year Plans, but the increase was insufficient. In the East the construction of the huge Urals-Kuznetsk twin plants proceeded with the utmost energy, and a new vast industrial district sprang up there on almost bare ground. Trains of mechanically loaded hoppers carry coal 1,400 miles from the Kuznetsk Basin in Western Siberia to the mills of Magnitogorsk in the Urals and return laden with iron ore from Magnitogorsk for the Kuznetsk mills. Siberian coal and Ural ore are converted both in Siberia and in the Urals into pig iron, steel and rolled metal of every description.

At the Ural end of the powerful Urals-Kuznetsk combination the Magnitogorsk iron and steel works were erected in a treeless, hilly steppe at the foot of Mount Magnitnaya.

At the top of the mountain excavators load the huge reddish-brown lumps of magnetic ore into cars. At the foot of the mountain the ore passes through a series of crushing mills. Long batteries of coke ovens turn coal into coke. Blast furnaces as tall as ten-storey buildings smelt the ore into pig iron, which is poured straight from the furnace into ladle cars. Open-hearth furnaces convert the pig iron into steel, which is passed through powerful rolling mills and made into plates and bars. The Magnitogorsk plant produces as much as a third of the entire pig iron output of tsarist Russia.

At the Siberian end of the combination the Kuznetsk iron and steel mill now provides Siberia with its own metal.

Thus, within a few years, the country set up in the East a second iron and steel centre, with the regenerated Ural mills as its chief constituent.

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To set the machines in motion mechanical power was wanted.

Most of the old factories were run by steam, not electricity. Electric power stations were few and far between in old Russia, and these few were of low capacity.

Peat, lignite and oleaginous shales could readily be had, but were left unutilized. Tsarist Russia hardly tapped its sources of water power—"white coal."

The rapidly growing national economy could not get along on the old power resources. It needed electricity—a universal, cheap and effective source of power which can be transmitted for long distances. Electrification became the lever by means of which the entire national economy was placed on a new, firm foundation, the foundation of modern machinery.

In 1920, when the country's economic life was at its lowest ebb, a plan for the electrification of the country was drawn up by order of Lenin and immediately put into operation. To many it seemed utopian. Yet during the fifteen-year period provided for in the plan, actual developments exceeded the original project by almost 150 per cent.

Many large power stations were built, most of them burning cheap local fuel, such as lignite, peat, coal dust and natural gas, or using water power. A high-voltage grid was set up, crossing fields, rivers and forests. The Dnieper Hydro-Electric Station alone produced more power than all of tsarist Russia. *

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To set turbines, locomotives, tractors, automobiles and aircraft in motion, fuels of various kinds are wanted.

Under tsarism the coal industry was virtually limited to the Donets Basin, so that the country had to import part of its coal requirements.

Under the Soviet Government the output of coal has multiplied several times over. Coal is no longer hewn by hand, but by coal-cutting machines and pneumatic picks.

With the development of new coal fields, the Donbas was relieved of the burden of its monopoly.

Before the Revolution the output of the Kuznetsk Basin was negligible. It was all consumed by the Siberian railways; yet the world has no coal deposits equalling those of Kuznetsk in magnitude or quality.

In Soviet times the Kuznetsk coal fields have become the mainstay of the Urals-Kuznetsk industrial base; they have been rapidly developed and have become a second Donets Basin. Located in the heart of Siberia new collieries now form the nucleus of a large new industrial centre. The map of the region is studded with signs and marks indicating collieries, power stations, coke ovens, blast furnaces, workers' settlements and highways.

The U.S.S.R. has advanced to second place in the world in output of mineral oil, next only to the United States. Modern machinery has been introduced for the extraction of oil, and output has increased several times over.

In tsarist days the oil industry was even more concentrated than the coal industry. The Caucasus was almost the sole producer of petroleum. During the Five-Year Plans new oil-producing centres were developed in the eastern regions—in the area between the Volga and the Urals, in Central Asia and on Sakhalin Island. The Caucasus remains an important oil base, but it no longer monopolizes production.

To strengthen the national economy and national defence, a chemical industry was essential.

In the U.S.S.R. the chemical industry has grown into a major branch of the national economy. The country now has nitrate, coke-chemical, aniline dye, wood-chemical, pharmaceutical, potassium, apatite, artificial fibre and plastic material industries, all newly established.

In 1931 Stalin said: “. . . We have everything in our country except, perhaps, rubber. But within a year or two we shall have our own rubber as well. . . .” Several factories were built and began to supply synthetic rubber to cover the country's main requirements.

Lumber was needed for the vast construction program. Circular saws for making railway sleepers, trucks and tractors, all came to the assistance of the axe, the hand saw and the draught horse.

* * *

To provide the people with the staff of life, the growing of grain had to be developed.

Under the tsar, the production of grain was the main economic activity of the country, but in many localities it was at a very primitive level.

During the Five-Year Plans the country's agriculture was radically transformed. The millions of small farmers pooled their resources and with state aid formed large-scale collective farms employing modern, state-owned and state-operated machinery: More than half a million tractors and some 200,000 combine harvesters were in use before the war.

The landscape of the agricultural regions changed; instead of the crazy quilt of small plots of land of the open-field system, where the peasant walked behind a wooden plough, there appeared vast stretches of unbroken land worked by columns of machines. Grain elevators and silo towers appeared, side by side with the new buildings of the machine and tractor stations and state and collective farms. Arterial roads cut across the countryside.

The new industrial centres that sprang up in the East called into being new centres of agriculture. Large modern grain farms sprang up on formerly desolate prairie. Tractors helped to put huge tracts of virgin land under cultivation.

Wheat growing was extended not only eastward but also northward.

Formerly a line running from Chernigov through Tula and Gorky to Vyatka roughly cut European Russia into two grain-growing sections. The line on the map seemed fixed, eternal. To the South of the line lay the black-earth zone, the cultivated steppelands, which raised a surplus of grain. This area was known as the "producing" zone.

To the North were the poor *podzol* soils, forests and marshes, which did not yield enough grain to support the local population. This area was known as the "consuming" zone.

Much of the wheat consumed outside the black earth belt had to be brought from elsewhere.

Was this due to a shortage of land? By no means. Millions of acres of land overgrown with juniper and alder, or studded with hillocks and tree stumps, might have been planted with wheat.

Was the soil unsuitable? No. The soil was in no way inferior to that of Denmark, and Denmark is known for its high yield of grain.

Was the climate too severe? No. There was sufficient warmth, though less than in the southern regions. But no drought threatened the crops; hence crops were more stable.

What then was the trouble? Simply this: The small peasant of tsarist Russia, weighed down by various compulsory services and imposts that had survived from the days of serfdom, did not possess

sufficient means for extending the cultivated area and introducing the better farming methods required outside the black-earth zone.

What was beyond the strength of the small farms was later achieved by large-scale collective farms, using modern machinery, working to plan and well supplied with fertilizers.

The division of the country into grain-"producing" and grain-"consuming" zones had prevailed for decades. Under the Five-Year Plans it became obsolete. The cultivation of wheat was no longer confined to the South; it was extended to the North, covering greater areas each year.

Special grubbing machines removed the tree stumps to clear the fields for wheat.

Caterpillar tractors tore through the thickets, while heavy brush ploughs turned up the virgin soil, ploughing under the branches and leaves.

Thus forests and thickets were turned into arable land.

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To provide the growing light industry and the food industry with the requisite increased supplies of raw materials, the area sown to industrial crops had to be enlarged.

Formerly half of the cotton used in the country was imported. Russia spent approximately 100 million gold rubles annually for foreign cotton. The U.S.S.R. launched a campaign for cotton independence and won it; the Five-Year Plans increased cotton crops until they were almost four times as large as before, fully covering the needs of the cotton industry.

Prior to the Revolution cotton was grown only in Central Asia and the eastern section of Transcaucasia. It was considered that cotton could be raised only on the specially irrigated oases that were sparsely scattered in the extreme south—that only these spots enjoyed sufficient sunshine. Under the Five-Year Plans additional areas were planted with cotton in these regions, but this necessitated intricate and expensive irrigation. To attain independence in cotton new cotton-growing areas had to be developed.

The cotton line of the U.S.S.R. was then redrawn, being shifted north, beyond the shores of the Azov Sea. It now embraces the Southern Ukraine, the Crimea and the Northern Caucasus.

A hot sun blazes over the steppes, which in the spring used to be a carpet of wild flowers and in the autumn overgrown with wormwood. They are now ploughed up, the furrows extending as far as the eye

can see. New roads have been laid and big ginneries built. New cotton-growing centres have sprung up.

Sugar-beet growing and sugar refining were confined to the Ukraine before the Revolution. Under the Soviets sugar-beet broke across this "natural" boundary and invaded vast sections of the South and East. In the South it reached Transcaucasia, where large areas have soil no less suitable than the Ukraine. Transcaucasia acquired its own sugar plantations.

In the East sugar-beet reached the shores of the Pacific. Now the Far East too has its own sugar.

Sugar-beet was introduced into the steppes in the foothills of the Altai Mountains, where an abundance of sunshine compensates for the short summer. Western Siberia also has its own sugar now.

Sugar-beet has come into cultivation also in Kirghizia and South-eastern Kazakhstan. These areas already produce high yields.

The Ukraine has remained the principal sugar-producing region, but is now far from being the only one.

The people have remade the economic geography of their country.

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The U.S.S.R. has not only extended the cultivation of old crops but introduced new cultures.

The new industries of the Soviet Union called for new plants to yield new raw materials; textile fibres and rubber-bearing and oil-bearing plants. Volatile oils, vegetable dyes, acids and plastic materials were needed in large quantities. Industry needed gutta-percha, which is made from the sap of an Indonesian tree; cork from the bark of an Algerian oak; tanning bark from Australian acacias; the fibre of the Chinese ramie, which resembles silk. New vegetables and sub-tropical fruits were in demand.

Formerly lemons were brought from Sicily, tea from Ceylon and figs from Turkey. Their replacement by home-grown products was the goal the U.S.S.R. set itself, a tremendous undertaking. The transplantation of American, Australian and Asiatic cereals, vegetables, flowers and fruits to Soviet soil was part of the programme.

Scientists scoured the deserts of Central Asia, the mountains of the Caucasus and the hills of the Trans-Baikal area in search of wild plants of economic value.

Many new crops were added to the farmers' list. A grain-bearing sorghum, of high drought-resisting qualities, was introduced in the arid regions of the U.S.S.R. Jerusalem corn was planted in the Southern Ukraine, the Volga Area and Kazakhstan.

The soya-bean, a Manchurian plant possessing proteins equal in value to those contained in meat, spread over hundreds of thousands of acres in the Ukraine and the Northern Caucasus.

Large plantations of the Kazanlik rose, imported from Bulgaria, grew up in the Crimea. These flowers yield valuable essential oil.

Byzantine oats, American couch-grass, the Dalmatian daisy and the Mexican guayule were introduced.

Groves of citrous fruits—tangerines, oranges and lemons—were planted in Georgia, on the subtropical Black Sea Coast, during the Five-Year Plans. Tea cultivation was extended tremendously. Chinese tung trees, yielding a highly valuable industrial oil, were planted over a big area.

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Eager to develop the country's productive forces and build up a powerful national economy, the Russians and the other peoples inhabiting the Soviet Union entered the lists against nature and undertook systematically to transform it.

The extreme North of Russia was barren. Along the ice-bound coast ran the tundra, moss-covered marsh-land on top of a layer of eternally frozen earth. There were no towns, no villages, and only the rare camps of nomad tribes that were dying out. These led a life not far beyond that of the stone age, with bows and arrows and stone-tipped spears. The North was dead; a vast, uncharted, roadless expanse.

The Soviet Union undertook the arduous task of developing the Arctic. To reach these regions a through sea route had to be found along the Arctic coast. For centuries scientists and seafarers had dreamed of such a route.

In 1932 the Soviet icebreaker *Sibiriakov* sailed from Archangel for Vladivostok via the Arctic. In the Chukotsk Sea the ship's screw broke. Winter set in and the sea froze over. The crew then blasted their way through the ice and under sail gained the Pacific.

A year later the *Chelyuskin*, also a Soviet icebreaker, followed the trail of the *Sibiriakov*. She was held up by the ice in the Bering Strait, carried back to the Chukotsk Sea and there her sides were crushed in. The shipwrecked company camped on an ice floe till rescued by plane.

A year later the icebreaker *Litke* made the trip without mishap. One more year passed and the Northern Sea Route was opened to ordinary freight steamers throughout its length.

Special vessels were built for plying on the Northern Route. Depths were sounded, beacons set up, charts rectified. Scientific forecasts of the state of the ice were published annually. Formerly openings in the ice were spotted by a sailor perched up in the crow's nest. In the Soviet Arctic, vessels have their courses traced for them by radio stations and scouting planes.

The Soviet Arctic ceased to be silent as the desert. Valuable minerals found on the shores of the Arctic Ocean have begun to be mined. Fish canneries have been built, large seaports have sprung up and special airways have been opened. Some fifty Arctic observatories have been established. Thousands of new settlers have come to the shores of the Polar basin. The nationalities inhabiting the North have developed economically and culturally.

A travelling theatre has been set up beyond the Arctic Circle. In the course of three years, performing for Arctic observatories and seamen, it covered some 30,000 miles. Professional actors come on deck, amidst the Arctic ice, and perform Soviet and foreign plays.

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In the extreme North, along the shores of the Arctic Ocean, there was no cultivation of any sort. On old maps of Russia we find a line indicating the "boundary of agriculture." A good third of the country's immense territory lay North of this line.

The swift settlement of the North under the Soviets meant a growing demand for foodstuffs, primarily for vegetables and milk.

The absence of agriculture hindered the development of the Far North. The task of introducing it seemed beyond human skill in a land of rocks and marshes, with nine months of winter. In June ice still lurks under the moss. The lowlands are full of ferns. The summer is fleeting, cold and damp. But despite the hostility of nature farming was introduced.

It began with experimental plots. All rocks were removed from certain areas, and the marsh drained. The soil was treated with alkali and supplied with fertilizer. The necessary bacteria were artificially introduced. Here man had ceased to adapt himself to his local environment; he was actively changing it. Year after year these plots were planted with seeds brought from all corners of the globe. Varieties were selected and crossed. Seeds were subjected to the process of vernalization and even the warmth of the soil was artificially influenced.

These efforts were not in vain. The superabundance of light was found to compensate for the insufficiency of heat. (In Khibini,

on the Kola Peninsula, for example, there is a six-week period every summer during which the sun never sets. The Arctic has responded to the energy of Russian scientists with crop yields unprecedented in these climes. As much as 125 tons of potatoes per acre are raised on one of Khibini's experimental plots. Southern varieties of barley can ripen, and fodder grasses can produce two crops a year. Cabbage, carrots, onions, radishes, kohlrabi, turnips, peas and beans are now grown beyond the Arctic Circle.

The boundaries of agriculture have been moved far to the North, to the shores of the Arctic Ocean. On Dickson Island, as far North as the 73rd Parallel, Chinese cabbage is raised on open ground. Daisies and pansies grow in flower pots. Even during the Arctic night plants thrive in hothouses in electric light. On Dickson Island cucumbers, mushrooms and lettuces are picked in April. In the winter lilacs bloom.

* * *

The North of the U.S.S.R. abounds in marshes, while in the South there is a belt of desert. "Too much water spells trouble," so runs a proverb in the North. "It's good luck to dream of water," say people in the South.

Either extreme is harmful: The marshes must be drained. The deserts require irrigation.

The area of marshland drained in the U.S.S.R. during the Five-Year Plans was twice the area drained during the whole of Russia's preceding history.

A ditch-digger drawn by a caterpillar tractor hollows out a channel three feet deep. A net of such ditches and canals drains the soil. Machines break up, smooth out and scatter fertilizers on the soil formerly saturated with stagnant water. It is thus made ready for cultivation.

Byelorussia is the republic in which most reclamation work has been done. Thousands of acres were reclaimed. The aspect of many localities was changed beyond recognition. Uninhabitable marshlands, where the air swarmed with mosquitoes, became fertile fields with a healthy climate, producing fodder grasses and hemp. Collective farms, power stations, hemp mills, schools, hospitals, cinemas and new roads were built across formerly impassable bogs.

During the years of industrialization, the immense work of draining Colchis was started in Transcaucasia. The Rion River, hemmed in by a dike five yards high, was compelled to change its course. The malaria-infested jungles were gradually transformed into health

resorts and a land of subtropical farming. Plantations were laid out on the reclaimed lands. Thus, excavators and pumps have built up a new healthy and thriving district.

* * *

Among the arid, sandy plains and salty marshes of Central Asia there are many localities with fertile soil. A cloudless sky, dry air and an abundance of sunshine favour agriculture. Here the mulberry tree grows to full size in three or four years. Cotton grows luxuriantly, and the fruits of these regions are excellent.

These lands have great potentialities, which, however, can be brought into full play only by irrigation.

Settled life in the past was limited to a few oases. For thousands of years the same methods of irrigation prevailed. The river water was raised to the level of the fields by chighiri, wooden wheels to which clay vessels were attached, and was brought to the fields by aryks, narrow and shallow canals.

To supplant these antediluvian methods the U.S.S.R. developed many modern irrigation schemes during the Five-Year Plans. New rivers appeared on the map, and also new districts of fertile land, collectively tilled by former nomad tribes now settled in permanent villages. The irrigated area was increased by more than 5,000,000 acres.

In the Ferghana valley, for example, in 1939, as many as 160,000 collective farmers, Uzbeks and Tajiks, dug the Great Ferghana Irrigation Canal stretching for 170 miles. The enthusiasm of the farmers, who tackled this job in fulfilment of a pledge to Stalin, brought this tremendous undertaking to completion in the course of only six weeks, whereas ordinarily it would have required several years. The Ferghana Canal was the biggest irrigation project ever completed in the Soviet Union, and one of the largest in the world.

Thus, six weeks labour of the people wiped a desert off the map.

* * *

Vast territories in the U.S.S.R. are occupied by desert and waste land: Sand, rock, clay and salt marshes. There is not sufficient water to irrigate them all. Are they then to remain deserts, dead spots on the country's map?

A scorching wind raising clouds of hot sand, the air filled with suffocating dust, a yellow pall blotting out the sun—this is the desert in all its grandeur and horror.

Formerly the deserts were roamed by occasional groups of Turkmenians and Kazakhs driving their herds from well to well. They never accumulated stores of fodder and were always at the mercy of the elements.

The U.S.S.R. devised methods of making the desert serve man, methods founded on the latest achievements of science.

It was no longer to be a humble adaptation of human life to the caprices of the desert. With the organization of collective farms, the desert dwellers began mowing hay and building silos, so as to provide their sheep with fodder for the winter. The nomads settled down on the land. Deep in the heart of the desert big villages sprung up.

Soviet agriculturists undertook to grow potatoes and grain, flowers and grapes in the desert sand. Diverse ways and means were adopted to accomplish this task—hybrid breeding, vernalization, chemical treatment of the soil, the creation of artificial shade, covering the soil with a layer of bitumen, planting in trenches, and so on.

In the desert near the Aral Sea, for example, on soil of sandy clay, where annual rainfall is less than an inch, scientific farming methods produced beets, tomatoes, peppers, gooseberries, currants, and several varieties of melon. A vast selection of flowers, including twenty varieties of rose, were cultivated.

At Repetek, an experimental station in the Kara-Kum desert, vines were grown successfully in trenches, at a depth of from twelve to fifteen feet. In the arid foothills of Daghestan grow apricot, pear and cherry orchards. Fruit and landscape gardeners have clothed the environs of the Emba oil fields in greenery. Vineyards grace the sands surrounding the Gulf of Kara-Bog haz-gol, on the Caspian Sea. At the scientific station in Iolotan, in the south-eastern corner of the Kara-Kum desert, barley is grown on sand without irrigation. Plots fertilized with nitrates and phosphorus yield approximately a ton of grain per acre.

Man has made the driest and hottest spot in the desert grow grain.

* * *

The Northern Caucasus, the Volga area and Northern Kazakhstan are not deserts. No artificial irrigation is required here. But these regions are subject to periodic droughts. The soil becomes absolutely parched, and the dry air teems with hot dust, which hides the sun. The stalks of grain wither and the ears shrivel up. Drought was the eternal curse of tsarist Russia.

The U.S.S.R. undertook a systematic campaign against this natural calamity. The collective farms began to apply scientific measures prescribed by special law, such as proper crop rotation and the introduction of drought-resistant varieties of plants. Protective belts of forest were planted over a huge territory in the south-east of European Russia, from the Azov Sea to the foothills of the Urals. Acacias, maples and ash trees were employed in this gigantic project of afforestation to shield the fields from the hot dry winds and to delay the melting of the snow.

In a short space of time tens of millions of acres of arable land were equipped to combat droughts. This was a victory for applied science. Crop yields in the drought zone improved considerably. In 1938, a year of severe drought, the foremost collective farms in the Volga area harvested more than five tons of wheat per acre.

Green belts became a feature of urban development. Stalingrad, which stood in the midst of a bare steppe, was well supplied with greenery by surrounding the city with more than ten thousand acres of forest, orchards and vineyards.

* * *

Between the White Sea and the Baltic lies a jagged rocky pine-covered ridge creviced by glaciers.

There was only one traffic line across this ridge, an overloaded railway line. The cheaper water-route from the White Sea to the Baltic led all round Scandinavia. A water-way cutting straight through the ridge could make the distance much shorter.

This short waterway became a reality with the building of the Baltic-White Sea Canal during the First Five-Year Plan. The canal was more than 120 miles long. The Scandinavian peninsula was turned into an "island."

Almost no metal went into the construction of the canal. The sluices and lock gates are made from the timber growing on its banks. The water is held by earthen dams, reinforced not so much by concrete as by timber.

Rivers were diverted, their old beds drying up. The River Povenchanki has ceased to exist. Lake Vyg, raised nine feet, submerged dozens of islets. Dams hold huge reservoirs. Fishermen's settlements were transplanted to the new bank. The railway line was moved. And then the canal was opened for navigation.

* * *

The River Moskva, which gave its name to the great city on its banks, could not provide the city with an adequate supply of water.

The main water courses bypassed Moscow; the Volga to the North and the Oka to the South. Only small vessels could reach the capital. This error of nature was rectified during the Five-Year Plans.

A dam on the upper reaches of the Volga raised its waters, forming a huge reservoir, with a surface of more than 115 square miles, known as the "Moscow Sea." The spot where the town of Korchev stood is now at the bottom of this vast artificial lake.

The plateau between the Moscow River and the upper Volga was cut by a canal more than 60 miles in length. Electricity pumps the water uphill at five pumping stations equipped with propeller pumps. Each of these stations lifts 100 cubic yards of water per second.

A stream five times the size of the River Moskva now reaches the capital *via* the Moscow-Volga Canal. A port for large motor vessels has been built in Moscow and the winding river straightened. After a hundred days in the settling tanks of a special forest reservoir, half of the water taken from the Volga flows to the Moscow waterworks, which now assure the capital a water supply that ranks among the best in the world.

Large two-deckers sail on the canal, which is spanned by several bridges and passes through a tunnel. Newly planted forests grace its banks. Old buildings, now under water, have been replaced by new Soviet settlements.

Man has compelled the waters of Europe's biggest river to flow by the walls of the Kremlin.

* * *

The Revolution released the creative forces of the people and for the first time the people displayed them to the full. The period embraced by the three successive Five-Year Plans, the last of which was cut short by the war, was a time of persistent enthusiastic labour which completely changed the face of the country. In this titanic work of transformation, Ukrainians and Byelorussians, Armenians and Georgians, Kazakhs and Tajiks, Uzbeks and Turkmenians laboured shoulder to shoulder with Russians.

Industrial centres of world-wide importance sprang up in former waste land. Factories were equipped with the latest machinery. Immense fields were worked by modern implements. Farming spread to regions where it had always been considered impossible. New railways, highways and waterways were laid across the country. Dozens of new cities appeared. The world beheld a country born anew.

In 1938 the index of industrial output (taking 1913 as 100) was 120 in the United States, 113 in Great Britain, 132 in Germany and 93 in France. In the U.S.S.R. it was 909. This unparalleled pace of development enabled the Soviet Union to outstrip France, Britain and Germany and to advance to first place in Europe in total volume of industrial production.

The ability to overcome in a few years the backwardness of centuries and to bring the country to a level of equality with the world's industrially most powerful states is the yardstick by which the creative energy of the Russians must be measured.

* * *

Suddenly our country was struck a blow of terrific force. The western regions, those of greatest economic importance, were overrun or threatened. The choice was to go under, or to shift industry to the East immediately and re-establish and develop it deep in the interior of the country.

The chances of success seemed very small. The task to be accomplished was to wrest industry from the danger of falling into the hands of the swiftly advancing enemy—to move hundreds of industrial establishments, involving the dismantling and packing of thousands upon thousands of intricate machines, to load into trucks all this equipment, plus hundreds of thousands of workers and members of their families, and convey them on overtaxed railways for thousands of miles to the Urals, Kazakhstan, and Siberia. Then, within a few weeks, or months at the most, there could be no thought of years, to build factory blocks at the new sites, house the workers, reassemble the machinery and start production again. The job, moreover, was not limited to shifting industry and resuming the production of the evacuated plants. The output of these plants had to be increased, many new factories built, harvests fully gathered and new vast tracts ploughed and sown for the coming spring. Measures also had to be taken for the proper distribution of the able-bodied male population between the front and the rear, so as to create an army many millions strong without reducing industrial output. It was necessary to find new labour reserves, lick them quickly into shape and put them to work in factory and field. Last, but not least, an administrative apparatus had to be set up to supervise the execution of this task.

Could the Russian people cope with this task of unprecedented magnitude and complexity? Yes, they could.

* * *

The great migration of factories and mills began. These factories and workshops had for years and even decades been working undisturbed in Moscow and Leningrad, in Kharkov and Dniepropetrovsk, in the Donetz Basin and the Baltic region. They were linked by railways with the mines and goods terminals and worked in close contact with each other. Around them clustered the settlements housing their workers. All these were suddenly torn roughly from the fabric into whose texture they had been so deeply woven. Under constant air raids, with lights blacked out, with the roar of artillery approaching, production was brought to a halt. Motors were stopped, belts removed, lathes dismantled and packed. This was destruction for preservation. Life was cut short to be revived in a new locality. Hundreds of thousands of workers left their old familiar homes, packed their belongings and evacuated with their families. Making the most of every day and hour, this huge cumbersome caravan trekked thousands of miles eastward. As many as 30,000 railway trucks were required to evacuate one Bryansk plant alone. And there were hundreds of such industrial establishments.

This eastbound stream of factories on wheels, swollen by a long list of evacuated cities and villages, encountered the westbound stream of trains carrying troops and munitions. The country's railways were still inadequate even for peacetime, especially as many had only a single track. But they withstood the terrific tension of the two opposite streams of wartime traffic. Train dispatchers worked for days on end; loaders worked till they dropped from exhaustion; engine-drivers drove their extra-long trains at increased speeds; when locomotive flues went out of commission, workers saved time by wetting their clothes and crawling into red-hot fire boxes to repair the damage without putting out the fire.

Raids by the *Luftwaffe* hampered the work of the railways in the West. But railway crews soon grew accustomed to this. The work of the Murmansk Railway was not interrupted for a single day, notwithstanding frequent bombings. At many stations not a single building remained intact. The entire area of the line was churned up and pitted by bomb craters and shell holes, but traffic was always kept moving. Burning cars were quickly uncoupled, new rolling stock was made up into trains and despatched according to schedule.

Severe frosts hampered the work of the railways in the East during the winter. The water froze in the pipes, limbs grew numb from the cold, but people stuck to their posts. The Tomsk Railway, deep in the heart of Siberia, fulfilled its big coal transport plan ahead of schedule.

In an incredibly short period of time a huge industry had been bodily conveyed from Europe to Asia, a transplantation without precedent in history.

* * *

But during the evacuation this industry lay unproductive. It had to be brought back to life as quickly as possible.

In the Urals, Kazakhstan and Siberia the railway stations and adjacent territory were piled high with crates of machinery. In this vast agglomeration of iron and steel one might discern the skeleton of a grinding machine, the outline of a boiler or the mighty curves of a dynamo. And right nearby, in tents or under plywood awnings, surrounded by fantastic bundles of household goods, were the families of the workers, the women washing clothes and their children romping. Only a Herculean effort could introduce order into this chaos of refugee machines and men.

Yet with magic speed every item found its place. Factory blocks sprang up, in the desolate steppelands; scattered parts were located and assembled into machines; workers settled in new homes, electricity shot along the wires and the evacuee industry resumed its work.

Factory construction had been started at once at the highest speed. Plans were drawn right on the construction sites. The first bricks were laid from sketches even before the final blueprints were ready. Cold winds cut to the bone and the Siberian frost was so severe that ungloved hands stuck to metal—but the workers stuck to their jobs for 12 to 16 hours on end.

In the new buildings machines were assembled, installed and set going in record time. One of the big Zaporozhye plants commenced production at its new location 19 days after arrival. A factory producing armament for aircraft, when moved beyond the Volga, was in operation again on the fifteenth day after its arrival and began to turn out more than on its old site.

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In the East, work was not limited to restoring evacuated industry. Huge industrial construction had been under way there before the war and, far from being discontinued after its outbreak, was greatly intensified.

During the First World War, Russian output of fuel dropped. During the present war, the output of coal has risen in the Eastern

regions of Soviet Russia. There new mines have been sunk, and many new oil wells have been drilled in the area between the Volga and the Urals, known as the "Second Baku."

Simultaneously the building of large power stations has been started.

During the First World War one blast furnace after another ceased to function in tsarist Russia. During the present war new blast furnaces have been fired in Soviet Russia. New iron and steel mills have been erected in the Urals. The biggest blast furnaces in Europe have been built at Magnitogorsk in war time.

Tsarist Russia had no rare metal industry during the last war. When molybdenum was required to harden steel it was procured from exhibits in geological museums. But molybdenum decides the strength of tank armour, tungsten the penetrative power of a shell, chromium is indispensable in the manufacture of non-corrosive aeroplane parts, antimony makes for hardness in bullets, indium for a bright searchlight beam. As many as 46 chemical elements come into play in an aerial battle. Rare metals were, of course, produced in the U.S.S.R. even before the war, but their output has risen sharply since. During the summer of 1941 geological parties, scouring every corner of the land, discovered many rich new deposits. The Urals, Kazakhstan and the Trans-Baikal area have become sources of supply of a great variety of rare metals essential to the war industry.

Tsarist Russia ran short of arms in the very first months of the First World War. Soviet Russia in the very first months of the present war set up new branches of war industry in the eastern regions, sending to the front a constantly increasing quantity of mortars, armour-piercing bullets, anti-tank planes, powerful "KV" tanks and that death-dealing rocket-gun Red Army men have fondly nicknamed "Katyusha" ("Katie").

The East has not only built new plants but also reconstructed old enterprises to meet the needs of war. New processes of production are devised on the spot.

Before the war the Magnitogorsk mills in the Urals and the Kuznetsk works in Western Siberia—the mainstays of the eastern iron and steel industry—produced only ordinary grades of metal. The war demanded high-grade steels for tanks. Such steel is customarily smelted in electric furnaces or small acid open-hearth furnaces. There had never been any attempt to produce alloy steels in large open-hearth furnaces. The entire technological process, from charging to pouring, was revised. New machinery was quickly installed. Before long the large open-hearth furnaces of Magnitogorsk and Kuznetsk were producing armour-plating for tanks.

Industry was re-gearred from top to bottom. War work was taken up not only by large enterprises but also by small workshops and handicraft co-operatives, which effected a rapid transition from the production of pots, pans, pails and toys to the production of anti-tank mines, hand grenades and sound detectors.

Formerly the industry of the East procured various raw materials from the West. For example, the iron and steel works in the Urals received their manganese from Nikopol in the Ukraine, and Ural plants manufacturing electrical apparatus used Donets clay for their porcelain. War-time prospecting brought to light sufficient manganese in the Urals and in Kazakhstan; porcelain clay was likewise found in the Urals.

Thus, in the course of a few months a new industrial area sprang up, located in the East. Its swift rise was possible because of the prudence exercised in laying its foundations during the years of Soviet industrialization.

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Factories alone, however, were not enough. Men were needed to work them. And thousands of workers were leaving daily for the front. The country had to create an army of many millions, and turners, fitters, miners, and iron and steel workers answered the call to the colours.

Many workers were exempted from army service to do their bit at their civilian jobs. Their number, however, was clearly insufficient. Industry clamoured for more and more labour.

When husbands left their machine-tools for the front, their places were taken by their wives.

During the first six months of the war the number of women workers at the Magnitogorsk iron and steel works alone rose by several thousand.

Many of these women were novices in industry and at first could only handle jobs requiring little or no skill. Some of them had worked before, and these were the first to learn the more difficult trades. Soon cleaners were operating motors, and office clerks were handling lathes.

Answering the call of war, the youth too flocked to industry. Thousands of young workers took up their places at the bench. Many boys and girls gave up for a time their dream of a higher education; the country could not afford to wait.

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The most remarkable thing was that in this strenuous period of gearing industry to war and training new personnel, productivity of labour did not drop but kept rising steadily.

Engineers and workers adopted the most ingenious devices to speed production. Every minute was precious. Instead of adding the ferro-manganese to the metal when it was in the furnace, a certain plant contrived a way of adding the ferro-manganese while the metal was in the ladle, at boiling point. This gave a saving of ten minutes on each smelting. At a Saratov leather factory two skins were fed into the cutting machines simultaneously instead of one. Everywhere conveyors, wheels and rotors began to turn at a faster pace.

Stringent economy in the use of raw materials was introduced. Not an ounce was allowed to go to waste. Before the war wet moulds were dried with coal; in war time the workers of one mill used blast-furnace gases to dry these moulds. Another plant began making bushes of anti-friction iron instead of bronze. Wherever possible metal was replaced by wood, concrete by brick. Metal scrap was collected all over the country.

People undertook to do the work of two or three. These workers regarded themselves as soldiers of industry. Before the war timberman Lyalin worked with an assistant, who prepared the props and cleaned up the rock; when his helper was called to the front, Lyalin did the work of both. At one aircraft factory a workman named Yakovlev undertook to tend three machines: a gear-cutter, a milling machine and a rough-finishing machine. Replacing eight workers, he finished his annual quota of output in four months. Dmitri Bosy, a Ural milling-machine operator tending two lathes, invented an appliance which enabled him to produce regularly ten times the standard of performance. Georgi Khaidin, a driller at the Altai mines, rationalized his work to a point where he performed fifty to sixty times the old schedule. These heroes of labour inspired other workers to emulate their example, with a resultant general rise in labour productivity.

People worked without thought of self. Sokolov, a mechanic at an Omsk factory, worked on an urgent order for five shifts on end without leaving the shop. Grey-haired foreman Luka Kazak and his shopmates repaired a turbine at one of the Ural power stations in 84 hours instead of the estimated 144. Throughout these 84 hours the old man did not sleep a wink.

As a result, despite its tremendous losses, industry began to produce more than ever before. The Kuznetsk iron and steel works completed its programme for 1941 ahead of time. So did the oilfields of Baku, Grozny and Emba. Aviation benzine production was two months ahead of schedule. In the hard first year of war labour laid the

foundation for the fulfilment of the unprecedentedly big programme of output for the following year: To double arms production in the Urals during the first half of 1942 and to double it again in the second half of the year.

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Intensive labour became the rule not only in the factories but also in the fields.

The East had to feed the country. The harvest had to be brought in swiftly and without loss. Yet most of the men had been called up, there were fewer tractors and fuel had to be economized.

The fields were tilled by women and adolescents. They were aided by townsfolk—the wives of factory workers and office employees, college students and older schoolchildren.

Every available means was utilized to bring home the crop. A tractor would pull three combines hitched together; when machinery did not suffice, ordinary scythes were brought into play, to reap the grain. On one farm a reaper was pulled by a horse, on another by a cow. Old men, too weak for field work, sharpened scythes. Children gleaned the fields behind the harvesters. People worked day and night.

Seventy-year-old Darya Podgornaya was always one of the first to complete her daily assignment; and yet she found time to teach youngsters how to bind sheaves. Agafya Kabiza, driving a tractor formerly operated by her husband, daily did fifty per cent more work than was called for by her schedule; 25,100 sheaves were carted in one day by three Siberian girls: Dusya Drebensova, Anya Borodina and Tasya Arkhipova.

And the result: the war harvest of 1941 was garnered in less time than the peace harvest of 1940. In the North Caucasus, for example, the harvesting took just half as long as in the preceding year. The excellent field work in the autumn laid the foundation for next spring's programme, which called for the sowing of an additional 5,000,000 acres in the East, particularly to wheat, sugar beet and oil-bearing plants.

What made all this possible? The arithmetic of rationalization plus the algebra of patriotic, heroic endeavour.

As the war progressed the Russians grew stronger, not weaker.

CHAPTER V

REASON AND EMOTION

The Germans not only seized our land and wrecked our economic life in the occupied territory but also sought to extirpate Russian national culture. They derided the Russian national spirit.

On October 10th, 1941, General von Reichenau issued an order approved by the "Führer" which averred that "historical and art objects in the East are of no importance."

The Germans wrecked one of the most celebrated places in the history of Russian culture, the Yasnaya Polyana estate, where Leo Tolstoy was born, lived and worked. Furniture made by the great writer himself was used by them for firewood. They looted paintings, photographs and other articles associated with the memory of Tolstoy. Trees which he himself had planted were ruthlessly cut down. His grave in the park is now surrounded by the graves of German soldiers. Everything conceivable was done to desecrate the memory of one of Russia's greatest writers.

The Germans ransacked the home of Tchaikovsky in Klin, near Moscow, where his immortal Sixth Symphony was written. The house had been turned into a museum, but the Nazis used it as a motor-cycle garage. Music manuscripts were burned or scattered over the grounds; busts were contemptuously smashed, paintings thrown on the floor and trampled underfoot, among them a painting of Beethoven. Evidently the great German composer aroused the ire of his compatriots by the fact that he was loved by Russians.

With vicious joy in destruction the Germans demolished the home of Chekhov in Taganrog, of Rimsky-Korsakov in Tikhvin and of Turgenev in Orel.

The famous seventeenth-century New Jerusalem Monastery at Istra, not far from Moscow, was reduced to a heap of rubble by the Nazis.

The Pulkovo Observatory near Leningrad was deliberately shelled by the Germans.

Libraries were burnt, churches blown up, and the trees of entire parks cut down.

Russian culture is "of no importance. . . ."

* * *

Isolated from the rest of the world, backward Russia before the days of Peter the Great took little interest in the study of the natural

sciences. The country's limited field of activities was covered by rules and habits dictated by everyday experience. People had narrow horizons. Intuition or superstition were the only substitutes for scientific research. "Cold in May—much grain and hay; many acorns—little grain." Generally speaking, only officials and priests were able to read and write.

Foreign travellers who visited Russia in those days attributed this backwardness to the national character of the Russians. These inquisitive souls were not possessed of sufficient power of observation to discern the inquiring mind, creative will and original talent beneath the frozen surface. They would see nothing until it was brought out in a sudden eruption of latent energy.

And then, at the beginning of the eighteenth century, Peter flung the windows of Russia wide open. The intellectual capacity of the people was put to the test. Conditions made it necessary that the ice be broken by initiative proceeding from above. Would the pent-up forces surge up from below? They did. The pressure of these newly released forces was so great that their product, Lomonosov, shot ahead of his time by many decades.

Mikhail V. Lomonosov, the first Russian scientist, was a representative of the Russian common people. Born into an illiterate peasant family who lived in a village in Russia's extreme North, he left his father's house at the age of nineteen and came to Moscow, where he succeeded in entering a seminary by posing as the son of a nobleman. He studied year after year, living on bread and kvas.¹ Having gained some recognition he was sent abroad to continue his studies, whence he returned to his native country an accomplished European scholar, to become the first native Academician among a group of foreign savants invited to work in Russia.

Lomonosov was not an accidental phenomenon, but the inevitable product of the rising flood that brought him to the surface, and of his own natural abilities. New social conditions and new technical developments brought about the birth of Russian science, and this science made manifest the latent power of Russian thought. The first Russian scientist acquired world renown.

Lomonosov established the law of the conservation of matter seventeen years before Lavoisier. His development of the theory of moving particles anticipated the modern atomic theory. He was the first to reject the then current hypothesis that heat was matter and to explain heat as the product of motion. He was the first in Europe to read a course of lectures on physical chemistry. He was the first to prove the vegetable origin of anthracite coal. Twenty-eight years

¹ Kvas: a drink made from grain or fruit slightly fermented.

before Werner he worked out a correct conception of ore seams and their origin. Thirty years before Schröter and Herschel he discovered the presence of an atmosphere round Venus. Almost sixty years before Young he ascertained the type of undulatory vibrations of the earth's surface. One hundred and thirty-five years before Nansen he outlined the direction of the drift of ice in the Arctic Ocean.

The Russian people produced this titan when they had hardly awakened to scientific thinking. The pall of darkness had not yet lifted and much of what Lomonosov discovered passed unnoticed both in Russia and the rest of Europe. Many of his discoveries were subsequently rediscovered independently.

When renascent Europe was gaining mental vigour after the lethargy imposed upon it by the theologians of the Middle Ages, its paramount need was a comprehensive scientific world outlook; the time was not yet ripe for narrow specialization in science. In the West this manifested itself in the encyclopædic interests of the scientists, in a combination of scientific method with artistic intuition. Those were the days of Leonardo da Vinci, Newton, Leibnitz and Goethe. Versatility was even more essential in Russia, where science was still in its swaddling clothes. There was need of a man who could scan the world in a new light and could place the many sciences upon a single foundation. Such a man was Lomonosov. He introduced to his country the study of physics, chemistry, astronomy, geology and geography. He studied the history of the Russian people and their economy. He equipped a scientific expedition to find a northern sea route. He compiled the first Russian grammar. He was a philosopher, an artist in mosaics and a poet. He was at once a Russian and a Western European. In the work of Lomonosov the intellectual endeavours of the Russian people merged with the general stream of European culture.

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Gradually native philologists, historians, naturalists and mathematicians made their appearance in Russia. These were, above all else, enlighteners of their own people. But hardly fifty years after the death of Lomonosov another Russian scientist entered the world arena with ideas far ahead of contemporary thought.

Lobachevski, a young professor of mathematics in the town of Kazan, on the Volga, vainly endeavoured, like thousands before him, to prove Euclid's fifth proposition, known as the parallel proposition, according to which: "If a straight line incident on two straight lines

make the angles within and on the same side less than two right angles, the two straight lines being produced indefinitely meet one another on the side on which the two angles are less than the two right angles."

In his attempt to prove this proposition by disproving its negation, Lobachevski built up a whole geometrical system, based on the rejection of the parallel proposition, in order to seek any contradiction between this system and established theories. As no such contradictions were found Lobachevski arrived at the brilliant conclusion that his new geometry was a legitimate mathematical system.

Such was the origin of non-Euclidean geometry, in which classic Euclidean geometry is but one of the many possible cases for which it provides. This was a revolution which infinitely extended the bounds of mathematics. It was the discovery of a new mathematical world. A new conception of space was introduced. The famous British mathematician James Sylvester aptly called Lobachevski the "Copernicus of geometry."

Lobachevski's treatise was made public in 1829. Approximately at the same time the German Carl Gauss and the Hungarian John Bolyai arrived at the same ideas independently of Lobachevski. Lobachevski's work was the first to appear in print, but that, of course, does not really matter. Science is not a race. The important point is that science had matured sufficiently in Russia to tackle the world's fundamental problems.

* * *

After Lobachevski Russia gave the world Mendeleyev.

When still a young chemist, Dmitri I. Mendeleyev was the first to establish the temperature at which the borderline between a liquid and a gas disappears; he called it the "absolute boiling point." The same phenomenon was subsequently observed by a British scientist, Thomas Andrews, who named it the "critical temperature," now the accepted term.

But that was not Mendeleyev's greatest contribution to science. The work for which he gained his world-wide fame was the discovery of the Periodic Law of the Elements, the basis of arrangement and classification in modern chemistry.

Mendeleyev made his discovery while preparing his *Principles of Chemistry*, intended for use as a textbook. The problem was now to classify the elements, a problem that was demanding solution. The vast accumulated empirical data had to be generalized. In various countries scientists already sensed some connection between the pro-

perties of elements and their atomic weights. During his work on the textbook Mendeleev put his finger on this relationship. In 1869 he enunciated his law that "the properties of elements are periodic functions of their atomic weights" (it would have been more correct to say, of their atomic numbers) and compiled his periodic table of elements. It is now accepted the world over.

There were gaps in the table: a number of elements were lacking. Mendeleev had the courage to predict the discovery of the missing elements, indicating in advance their properties. He had predicted eka-aluminium, and four years later it was discovered by Lecoq de Boisbaudran and named gallium. He had predicted eka-boron, and eight years later it was discovered by Nelson and named scandium. He had predicted eka-silicon, and fifteen years later it was discovered by Winkler and named germanium. Their properties bore out Mendeleev with amazing exactness. This was a triumph of human thought, and of Russian thought.

The Periodic Law gave a new direction to the subsequent development of chemistry, up to the transformation of one element into another. It brought mankind nearer to an understanding of the universe.

Mendeleev's great services to science were recognized in full measure abroad, particularly in Britain. He was given doctorates by the Universities of Edinburgh, Oxford and Cambridge, was made a fellow of the Royal Society in London and Edinburgh, and was awarded the Davy and Copley medals.

His was a talent that transcended all national bounds, yet it was typically Russian: bold, original, versatile and of broad horizon, concrete, capable of whole-hearted passion and inspired by love of his people, a love which arises from a feeling of kinship with all humanity and is therefore untainted by prejudice against other peoples.

Mendeleev engaged in pursuits outside the realm of chemistry. He worked out railway tariffs with the aim of promoting Russian industry; he conducted agricultural experiments, wishing to stimulate the Russian countryside; he was an ardent advocate of a great northern sea route as part of the development of the Russian Arctic; he made the first designs of a stratosphere craft and prepared the introduction of the metric system in Russia. He was also a journalist who ardently championed such ideas as the raising of the productivity of labour, the subordination of nature to human needs, education, and the emancipation of women. He viewed Russia as a "slumbering giant whose time of awakening has arrived." He lived for his people, and his labours served all mankind.

Lomonosov had been the only Russian scientist of his day. Lobachevski was the most gifted among a few. But Mendeleyev, only a hundred years after Lomonosov, stood at the head of a numerous scientific fraternity. In the second half of the nineteenth century Russia held a conspicuous place in the world of science.

The Russian chemist Butlerov was one of the founders of modern organic chemistry, and one of the originators of the molecular theory.

The Russian mathematician Chebishev elaborated the theorem of mean values, one of the mainstays of the theory of probability; he contributed more to the theory of numbers than anyone else after Euclid; he created a new branch of mathematics, the theory of approximations.

The Russian biologist Alexander Kovalevsky made highly important discoveries in embryology at the end of the nineteenth century. His brother, Vladimir Kovalevsky, is generally recognized as the founder of modern palæontology.

The Russian mathematician Sophie Kovalevsky, the wife of Vladimir, was the world's greatest woman mathematician. The Kovalevsky theorem is included in all full courses in mathematical analysis. She was awarded the *Prix Bordin* by the Paris Academy of Sciences for her contribution to mechanics.

The Russian zoologist and embryologist Mechnikov, collaborator of Pasteur, discovered and studied the cells which absorb harmful bodily substances, and laid the foundations for the theory of inflammation and the theory of immunity.

The Russian physicist Lebedev proved by experiment that light exerts pressure.

The Russian physiologist Sechenov gained fame for his study of reflexes and central inhibition.

The Russian biologist Timiryazev studied the synthesis of organic matter by investigating the inorganic matter in the chlorophyll of plants.

The Russian geologist Karpinsky has done much to establish the boundaries of ancient seas and the directions of vibrations of the earth's surface; the "Karpinsky lines" constitute a great achievement in the domain of geology.

Ivan Pavlov, a Russian physiologist of world repute, was a prolific contributor in his chosen field throughout his long scientific career, which embraced the last third of the nineteenth century and the first third of the twentieth century. His work was a miracle in experimentation almost from the start, when he divined the secrets of digestion and revealed its workings and chemical processes. His later researches

were of even greater consequence. He brought about a revolution in the study of higher nervous activity.

By a series of amazing experiments, first on dogs and then on monkeys, Pavlov demonstrated that physiological methods could be applied in investigating the activity of the brain. He delved into the mysteries of psychology, elaborated the doctrine of conditioned reflexes and made it the foundation stone of the study of psychological processes. This was a superb victory of the human intellect. The brain had learned to know itself.

The Revolution found Pavlov an old man, but his energy had not waned. Experiment followed on experiment, discovery on discovery.

During the days when the country was in the throes of famine and economic collapse, Lenin wrote a letter to Pavlov which greatly heartened the scientist. Shortly afterwards the Government by special decree granted Pavlov a subsidy for his work. Formerly this great savant had to spend part of his modest salary to pay assistants. Now large funds were placed at his disposal by the Soviet Government and a special scientific centre with splendidly equipped laboratories was built for him near Leningrad. Since Pavlov's death research along his lines has been continued with undiminished intensity.

The Revolution brought culture within reach of the whole people. The Soviet Constitution guarantees Soviet citizens the right to education. During the last quarter of a century the number of higher educational establishments in the U.S.S.R. increased ten times over, and the number of students rose to a point where it was double that of England, Germany, France and Italy together. About a thousand scientific institutions have sprung up as compared with the handful in pre-Revolutionary times. Science has spread not only among the Russians but among the other peoples of the U.S.S.R. as well. The country has become science-minded.

The Soviet mathematical school, represented by Vinogradov, Alexandrov and others, has gained international prominence; in some branches, as for example topology and the theory of numbers, it holds a leading place. Great achievements have been scored by Soviet physicists. Thus, for instance, the superfluidity of helium was discovered by Kapitsa; the spontaneous disintegration of uranium was first observed by Soviet scientists; and the combined diffusion of light was discovered independently in the U.S.S.R.

Vernadsky and Fersman have received world recognition for their work in geo-chemistry. Great successes have been registered by Soviet biologists—Lysenko, Tsitsin and others—in controlling the development of plants and in the creation of new plants, as, for example, perennial wheat.

Medicine has made much progress in the Soviet Union. Nikolai Burdenko is one of the world's greatest neurological surgeons, possessing exceptional skill in diagnosing and operating on tumours. Lena Stern has developed new methods of fighting traumatic shock. Alexei Speransky has explained the mechanics of the origin of many diseases due to trophic disturbances of the nerve system.

Before the Soviet Revolution scientific development was hampered in Russia by the economic backwardness of the country, by the low cultural level of the people and by the bureaucratic inertia of the authorities. It surmounted all obstacles in its path, but progressed only in spurts. The genius of the Russian nation manifested itself in bright flashes of intellectual activity. These sporadic outbursts of the creative mind were both astounding and tragic. The people were talented, but their talent was fettered. Now and then this talent shone forth with a brilliancy that dazzled the world; but fate was unfriendly, and soon the light would fade.

What was more miserable than the lot of Russian inventors ?

Kulibin was born in the middle of the eighteenth century, the son of a corn-chandler in Nizhni-Novgorod. In his youth he helped his father, and was taught by the local deacon, who himself had but a rudimentary education. Thus, Kulibin remained virtually semi-literate to his dying day. Yet despite these handicaps he delved into the secrets of British craftsmen and found out the way to make telescopes. Again, from thousands of tiny parts he assembled a pocket watch which snapped open every hour to reveal the performance of a miniature theatrical scene. He built a model of a huge single-arch wooden bridge, designed a tricycle and invented a self-propelling boat and a telegraph signalling system. He died a pauper and was buried by charity. Not a single one of his inventions was adopted, with the exception of some trifles that found application at the royal palace, such as a mechanical window opener, a mirror lantern for dark corridors, and smokeless fireworks.

Polzunov, the son of a Russian soldier, worked in a Siberian factory, for which he produced the first steam engine in Russia. He improved the Newcomen engine, descriptions of which he had read, and was the first to use coupled cylinders with the automatic distribution of steam, making the steam engine a universal mover. Thus, Polzunov anticipated Watt's brilliant discovery by several years. But before he had a chance to make use of his machine he died of undernourishment in dire poverty. His machine, which had fully proved its worth, was ruined after two months by careless handling and was soon completely forgotten.

The Russian inventor Tsiolkovsky was the first scientist to evolve the theory of the cosmic rocket engine and to design an all-metal dirigible. His work, however, found no recognition and Tsiolkovsky, whose small salary as a teacher went to finance scientific experiments, lived in dire straits until the Revolution, which brought him fame and large State subsidies.

The Russian horticulturist Ivan Michurin, possessed by the idea of "turning the whole world into a garden," had to work under the most stringent financial conditions, but created more than 300 new varieties of fruits and berries, excellent in quality and hardy enough to resist the severest climate. Like the wizards of old he made plants do his bidding, crossing cherries with bird-cherries, pears with rowans and apples with currants. But he was far better known in America than he was at home, in tsarist Russia.

The last years of his life Michurin lived under Soviet rule. The new Government did everything to enable the great innovator in plant life to carry on his daring experiments. He was given an extensive staff of assistants, with splendidly equipped laboratories at their disposal. Michurin's methods and his new varieties of fruit spread widely throughout the country; for the first time apples were grown in Siberia and grapes defied the Moscow winter.

Electrotechnics is perhaps the field of science in which Russian inventors have made their greatest contributions. It is remarkable that in a backward country man's creative energies should have been attracted by this, the most revolutionary and most advanced of all branches of technology.

In 1802 and 1803 Professor Petrov, self-taught son of a small-town priest, discovered, independently of Nicholson and Carlisle, the phenomenon of electrolysis, the basis of modern electrochemistry.

A Russian inventor, Yablochkov, made the first practical electric arc lamp in the world, which found wide application. However, Yablochkov had to leave Russia to develop his invention, which he patented in Paris in 1876. The Louvre shops, the Châtelet theatre and the Place de l'Opéra were lighted by "Yablochkov's candles." The first electric lamp in the world was called "*la lumière russe*."

Another Russian electrical engineer, Popov, made the first practical application of Hertzian waves, and in 1895 invented the radio-telegraph. Soon afterwards a radiogram was instrumental in saving the lives of twenty-seven fishermen carried off on an ice floe into the Baltic Sea. This fact created a sensation at the time. But Popov's wireless telegraph was not developed in Russia. His invention is applied all over the world, but it carries the name of Marconi, who took out a patent for it shortly after Popov had made his first announcement.

The speed with which new Russia was mastering modern technical processes during the Five-Year Plans came as a surprise to many people abroad. The transformation was indeed marvellous to behold. Backward in the extreme until quite recently, Russia had suddenly become a land of huge modern plants, using machines of original design, intricate instruments, and first-class mechanical equipment. Whence this technical skill of the Russians?

But, as we have seen, there was nothing amazing about it!

* * *

The Russians have made many contributions to the different branches of science, in particular to geography. There is hardly another nation that has done more to augment our knowledge of the globe. The Russians have not only settled on an immense territory but have studied it. The vast expanses stretching from the Baltic to the Pacific and from the Arctic to Central Asia have been explored and mapped by Russian scientists.

At first geography was not a science in Russia but was part of the people's everyday life, of their daily work. The ploughman learned to know the steppelands, the hunter penetrated deeper and deeper into the primeval forests, the fisherman studied the contours of the sea coast. This early knowledge of inhabited regions was incorporated in the first map of Russia, the "Great Chart," drawn during the days of Ivan the Terrible.

Next, the unknown expanses of Siberia were opened up by enterprising Russians. The sturdy Cossacks, bold hunters of furs, covered the whole territory, extending Russian rule to the shores of Alaska. But these intrepid pioneers could not explore Russian Asia scientifically; they had done their share when they penetrated into these parts and established Russian sovereignty.

The scientific study of the territory of Russia began in the eighteenth century.

In 1745 Peter's project of compiling an academic atlas of Russia was realized. At that time France alone possessed an atlas comparable to the Russian. Euler, a contemporary Swiss mathematician, stated: "I am certain that the geography of Russia is now in better shape than that of Germany. . . ."

The geographic expeditions of the Russians were organized on a grand scale. The Great Northern Expedition organized in the middle of the eighteenth century illustrates this. The expedition was in the field ten years, in the course of which it charted the Arctic shores

of Siberia. The expedition's personnel ran into hundreds. In small wooden sailing vessels these Russian explorers braved the darkness and bitter frosts of the Polar night to study the shores of the Arctic Ocean for thousands of miles, from Archangel to the Chukhotsk Sea. Thanks to their labours the map of Northern Asia has acquired the contours familiar to us all. The memory of these heroes of the Russian Arctic has been preserved in the names of capes, bays and vessels. To wit: Cape Chelyuskin, Laptev Sea, ice-breaker *Malygin*, etc.

The study of Russia proceeded step by step. Many a Russian scientist has since explored the land, disclosing its wealth and beauty to its people and to the entire world. Vast Siberia, the distant shores of the Far East and the mountain regions of Central Asia, so difficult of access, have all been explored and mapped.

Particularly great has been the progress scored during the last twenty-five years, since the Revolution. Once liberated, the people have wiped off the last "white spots" from the map of their country. The last geographic puzzles have been solved by elaborate expeditions travelling by automobile, aeroplane and air-sledge and following a unified State plan. Recent expeditions explored the heart of Eastern Siberia, the Pamirs and the Kara-kum desert.

Most has been accomplished in the region where work was most difficult—in the Arctic.

Soviet geographers charted the hitherto unknown regions in the centre of the Polar Basin and for the first time in history linked the West with the East *via* the Pole, which is the shortest route. In the summer of 1937 two successive flights, one piloted by Chkalov and the other by Gromov, were made from the U.S.S.R. to the U.S.A. across the North Pole. They flew over the drifting ice-floe where four men, under the command of Ivan Papanin, were exploring the tides, winds, currents and other scientific data in the North Pole area.

Planes had landed these four Russian explorers on the ice at the Pole itself. For 274 days they drifted on their ice-floe, covering almost 1,600 miles. Subsequently they were conveyed to the mainland from their crumbling ice-floe by Soviet ice-breakers.

Later the Central Arctic Ocean was traversed by the drifting ice-breaker *Sadko*, which reached a higher latitude than the *Fram*. An air-borne expedition piloted by Cherevichny penetrated to the "Pole of Inaccessibility."

The Russian explorers of the Central Arctic region have made an outstanding contribution to our knowledge of the world.

Russia is virtually a continent in itself, covering, as it does, one sixth of the globe. In surveying their limitless steppes, vast forest tracts and endless rivers, the Russians were measuring a world of their own.

This alone would have been sufficient to attach world-wide importance to the work of Russian explorers and travellers. This importance of their work was enhanced by the fact that they did not confine their investigations to their own country. Their activities took them further afield. Russian scientists, while remaining citizens of their native land, have always been citizens of the world as well.

Even before the days of Peter the Great, when in the opinion of foreign observers Russia was hopelessly backward, the Russian people produced men of great vision and enterprise.

Afanasi Nikitin, a merchant from Tver, set out in 1466 on an extensive journey. He sailed down the Volga and from there made his way across the Caucasus. Next he crossed Iran and, setting sail once more, reached India, where he lived for several years. Thus, while still under Tatar suzerainty, Russia brought forth a man who visited distant, fabulous India a quarter of a century earlier than Vasco da Gama. His notes, entitled *Travels Beyond Three Seas*, contain valuable geographical information and at the same time present a portrait of a cultured and advanced Russian of those days—an enterprising, bold, inquisitive man, ardently devoted to his country, but at the same time harbouring not the slightest ill feeling toward other nations and races. This first known Russian traveller mentions many peoples among whom he lived, but he speaks contemptuously about none. The Indians were his friends.

Peter the Great initiated the scientific exploration of Russia. The very first Russian geographical expedition was sent out to settle a point of interest to the entire civilized world: Whether the American and Asiatic continents are or are not linked by land? For that purpose Vitos Bering, commissioned by Peter the Great, cruised about in northern waters until in 1728 he passed from the Pacific into the Arctic, thus duplicating the then unknown exploit of the Cossack Simon Dezhnev, who, however, had sailed in the other direction. Man had rounded the north-eastern extremity of Asia.

In 1741 Bering and Chirikov sailed from Kamchatka across the foggy, storm-swept, uncharted Northern Pacific and were the first Europeans to land on the western shores of North America—the discoverers of Alaska.

The Russians now began to colonize this new territory and to study its coast, thus spreading out over a new continent.

To establish closer contact with Russian America, subsequently sold to the United States, Krusenstern and Lisiansky in 1803-1806 made the first Russian trip around the world, sailing from Petersburg around the Cape of Good Hope, the more direct northern route being considered too risky. Besides delivering cargo they conducted scientific investigations in the Pacific *en route*, discovering new islands and rectifying maps. From 1819 to 1821 a Russian expedition, headed by Bellingshausen and Lazarev, sailed far to the south, discovering many islands on the way. On reaching the higher southern latitudes they broke through the ice and gained the shores of the Antarctic. The discovery of this continent is a Russian achievement. The entire Pacific region now contains numerous Russian place names: Suvorov Island, Kutuzov Island, Bering's Shallows, Peter I Island.

There is a Maclay shore in New Guinea. It is named after a Russian scientist, Miklukho-Maclay. Prompted by his interest in mankind, he went there to study human society in its most primitive form. He landed in 1871 at one of the wildest spots on this distant tropical island, at a point never visited before by civilized man. To gain the confidence of the Papuans he went unarmed and won them over by his courage. Surrounded by hostile natives, he calmly went to sleep as though no danger threatened. When asked whether he was mortal, Maclay handed his questioner a spear with the one word: "Try." It ended by the natives taking him for a god.

Maclay spent several years on the island, studied the life of the people and brought back a vast amount of scientific material. He was a messenger of good will from modern civilization to a people that still dwelt in the distant past of the human race.

Russian geographers rendered particularly great service in the study of Central Asia. This immense inland region is a continent in itself and adjoins the southern borders of Siberia. It covers a tremendous area, and has been the object of Russian investigation for the past hundred years. Scientific exploration has replaced medieval myths concerning lofty Tibet, boundless Mongolia and the lifeless Gobi Desert. All this was primarily the work of Russian geographers.

The Przhevalsky, Pevtsov, Potanin and Kozlov expeditions covered thousands of miles, their routes cutting across Central Asia in every direction.

Przhevalsky accomplished more than any other explorer. Indefatigably leading one expedition after another, he penetrated into the very heart of Central Asia, revising the map of the entire region. The great Russian geographer described many new mountain ranges, mapped the upper reaches of the Yellow and the Yangtze Rivers,

found the exact location of the Kuku-Nor and Lob-Nor lakes, discovered the wild horse and the wild camel and collected a vast amount of scientific material. This first explorer of the central section of the greatest continent, an area very difficult to penetrate and hitherto almost entirely unknown, left a splendid description of his travels. Thirst for knowledge, singleness of purpose, dauntless courage and an irrepressible love for an active life are the main traits that characterize Przhevalsky.

Przhevalsky's pupil, Kozlov, was likewise a remarkable explorer. His expeditions travelled the length and breadth of Central Asia. Fortune favoured him—he succeeded in visiting the Dalai Lama, found in a two-thousand-year-old necropolis traces of a blend of Chinese and Greek cultures, and located the dead city of Khara-Khoto. The site of the capital of the Hsi-Hsia people, covered by sands, was zealously concealed from Europeans by the natives, but Kozlov managed to spot it. In the dead city he found paper money of the Yuan Dynasty that had been mentioned by Marco Polo, but was first seen by Kozlov. A tower in this mysterious city contained a library of nearly two thousand books and manuscripts. He had unearthed a Mongolian culture that had flourished seven centuries ago.

Such has been Russia's contribution to science.

Russian men of learning have been concerned not only with the Russian traits in human nature but also with the human traits in Russian nature. To them Russia has never been *über alles*. To them the planet Earth is first; then comes their dear, beloved country.

* * *

Such is the Russian mind. And what of Russian emotion? What has Russia done in art?

The spirit of a nation is primarily expressed in its architecture, which crystallizes the creative forces of a people for ages to come. It is the only one of the arts which adds a cultural element to the composition of the landscape, which enters into that visible unity which arises from the action of man, the social being, upon nature. A land is the home of a people, and architecture is a detail of that home.

In order to find the genuine, spontaneous roots of anonymous Russian art, you must leave the clamant roads of history and strike out into the depths of the land, into the northern woods, where time has come to a standstill. Here something primordial spreads out before you, something immemorably associated with the people:

Russian wooden architecture. To it the saw, nails and architectural schools were strangers. It was the product of a sharp axe, a sure hand, and a superabundance of emotion.

Almost no ancient peasant homes remain; they have fallen into ruin or been burnt down. However, there remain the shrines—material creations of a simple faith. Neglected wooden churches of hoary antiquity stand here and there amid brooding forests, on the banks of the great rivers of the North.

Tall, many-sided buildings, darkened by time, are built of round logs, neatly dovetailed. The little porch looks like a starling's nest box. The design is simple. And above are the severe but daring lines of the shingled spire, crowned by the onion-shaped dome and the Orthodox cross. Near by is the silent belfry with its bells all gone, and the leaning crosses in the cemetery; fir trees taper sharply like the church spire; there is the slope of a hill, and a wide woodland river. . . . A toy? A scene from fairyland? No—only a modest, unsung miracle of art.

The wooden architecture of Northern Russia was untouched by foreign influence. The stone architecture of ancient Rus, on the other hand, was first under the influence of Byzantium and then of Italy. Byzantium passed on to Rus the traditions of Greece, while Italy introduced the motifs of the early Renaissance. Accepting the best of these foreign strains, Russian architecture retained its own individuality, its own character. It was unerring in its choice of models, yet its creations were unique.

The opulent city of Kiev erected a magnificent edifice, the majestic St. Sophia Cathedral, built by Yaroslav the Wise in 1036. This cathedral contains many Byzantine features, nevertheless it is a distinctly Russian place of worship. It is not a copy but an adaptation.

We find more numerous remnants of the past in the north-western part of Rus, which was not razed by the Tatars—in the ancient city-republics of Novgorod and Pskov. Here the Russian strain is stronger still. The antique kremlin walls, the cathedrals, the belfries, the old Russian mansion towers (*terems*)—they form a world apart, a world of poetry, a world redolent of Russian history, a world that cannot be duplicated and that is infinitely precious to every one of us. Oldest of all was the St. Sophia Cathedral in Novgorod, built in 1052, now demolished by the Nazis. Its composition, lines and proportions were of great beauty, its æsthetic power was extraordinary.

The churches of Novgorod and Pskov seem to say: Behold your forefathers! In their own image did they build. A massive cube, solidly planted on the earth, broad-shouldered, calm, without any ornamentation; white walls of irreproachable smoothness, with narrow

slits of windows, like eyes peering out from behind a visor; the proud majesty of the cupola, resembling the helmet of the legendary Russian knight of old.

Still less external influence, still more native Russian beauty, reside in the churches of Vladimir-Suzdal Rus. Here, where the Nerl falls into the Klyazma, stands the Church of the Intercession of the Holy Virgin, built in 1165. It is one of the finest examples of Russian architecture. A credit to Russian genius, it is one of the world's most poetic pieces of art. The utter grace, the purely human immaculacy of this white church stir the very depths of the soul. Its lines are so harmonious and delicate that one might think it was carved out of ivory by some magician. You want to pick it up and put it awestruck on the palm of your hand.

Then comes the Moscow Kremlin. Italians took part in its creation.

Moscow grew apace, waxed rich and strong, became the seat of government of a great and powerful State. In accordance with the prevailing custom, which tended to promote progress and culture, it invited the world's best artists to apply their talents to architectural creations that would express the dignity of the city. Curiously enough, the more gifted the foreign architects were, the more were they fascinated by the mysteries of Russian art, and the more readily did they succumb to its influence. The buildings they designed, while enriched by the exotic features of an advanced foreign culture, were Russian in spirit. Thus, in 1479, Ridolfo (nicknamed Aristotle) di Fioravante, the famous Bolognese architect, built the Uspensky (Assumption) Cathedral within the Kremlin walls. This building evinces the noble features of the Renaissance, yet by and large it is Russian, continuing the series: Kiev, Novgorod, Vladimir, Moscow.

Side by side with the round domes on churches, there appeared pyramidal spires, like those of the wooden churches of the North. An example is the Cathedral of St. Basil in Moscow's Red Square, erected in 1560 by Postnik and Barma, both Russian craftsmen. Moscow needed an imposing monument to commemorate the capture of Kazan and the conquest of the Volga, to glorify this new extension of Russian power. This shrine with its numerous domes, a riot of colours and shapes, is a festive ensemble of Russian architecture. Gone are meagreness and restraint. Here Russian talent has given most generously of its creative faculties—a marvellous creation of artistic genius, like a sublime fairy tale.

The spired church in the village of Kolomenskoye (near Moscow) is of somewhat earlier date. In its overpowering simplicity resides the might of a strengthened Moscow. Russian craftsmen, of whom it had so often been declared, either in ignorance or pride, that they

had no background, no sound basis from which to work, created here a masterpiece of truly national architecture. Let a foreign observer speak. Here are the words of the French composer Berlioz:—

“Nothing in my whole life has astonished me so much as the monument of ancient Russian architecture in Kolomenskoye. It has been my good fortune to see much that has pleased or amazed my eye but the revelation of ancient Russia in this memorial of its art was to me a miracle of miracles. I have seen the Strasbourg Cathedral, which it took centuries to build. I have stood by the Cathedral of Milan, and seen nothing but the ornaments with which it is plastered. But here I was seized by the beauty of the structure as a whole. My whole being was thrilled. There was a mysterious quiet about the church, the harmony of beauty, of finished forms. I gazed upon a new genre of architecture—my eyes could see its soaring impulse and I stood paralysed I know not how long.” (1868.)

Then came the eighteenth century, the age of Peter the Great, the age of intercourse with Western European culture. Russia became a world power and began to draw on the architectural styles prevailing in the West. This was a testimonial to her maturity, but she was accused of imitation!

The first foreign vogue in Russia was baroque, in the Russian acceptance of that style. Then came a period of classicism, in its peculiarly Russian interpretation. These imported styles were modified and adapted to Russian surroundings, Russian needs, Russian architectural traditions, and the peculiarities of Russian creative genius. Thus, for example, the baroque of early St. Petersburg sent up tall spires, which tended to overcome the effect of the low-lying banks and to express the strength of a transformed country.

It was not easy for a Russian to make his mark. The court entrusted the principal building projects to architects invited from abroad, awarding only minor jobs to Russians. But there were genuine artists among these visitors, and the inexorable laws of art forced them to abandon the old forms and create new ones for their new homeland. Thus Rastrelli, Cuarengi and Rossi became great Russian architects. But with all the prestige and precedence the foreigners enjoyed, Russians also showed superb craftsmanship. Zakharov, Kazakov, Bazhenov, Starov and Voronikhin built specimens of architecture not inferior to those of the foreigners.

The victory over Napoleon brought a new wave of creative energy. Russia sensed her strength, and gave it expression in her architecture. From this period date the majestic St. Petersburg architectural ensembles, the classic private mansions of Moscow, and the manor houses, so full of poetic beauty and charm, of the Russian provincial

aristocracy. Such was the origin of the Russian Empire style. This was a genuine flowering of architecture, and Russia may be said to have had few rivals in that field at the beginning of the nineteenth century.

The Russian bourgeoisie, caught between lingering feudalism and approaching world imperialism, was too engrossed in the difficult problem of existence to contribute anything new to architecture before it was swept away by the Revolution. Some of the buildings it erected were a hotch-potch of architectural styles, from Egyptian to modern; others were built in a sort of pseudo-ancient, pseudo-Russian style in wood, with carved roosters, gaudy painted flowers, and petty ornamentation calling to mind embroidery on towels. This tasteless stylization was infinitely removed from the austerity of ancient Rus, but was accepted by many at its face value and abroad was dubbed "*style russe*."

The Revolution cast off all that trumpery, but at first it could offer in exchange only an over-simplified, primitive imitation of Corbusier; the "box house" appeared on the scene. Only the era of grand construction ushered in by the Five-Year Plans produced a new architecture that sought to harmonize beauty and convenience. Thus appeared the Dnieper hydro-electric power station of glass and rose tuff; the underground palaces of the Moscow subway, built of marble and flooded with light; and the project of the Palace of Soviets, designed to be the highest building in the world, the construction of which has been interrupted by the war.

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In ancient Rus painting was confined to ikons and church frescoes. The people's urge for beauty found expression in the production of delicate hand-made lace, in the gay colours of the shaft-bows and yokes of their draught cattle, or in the intricate designs they carved upon their window-frames. But all this inspired art was for domestic use only; public art was dominated by religion and conformed at first to Byzantine standards.

Religion determined the style of this genre of painting—abstract, conventional, "unearthly." At first it seems that one must have faith—faith unreasoning and unreserved—to be moved by these ancient religious paintings, to see life or beauty in them. Yet man possesses other faculties which enable him fully to appreciate the charm of this ancient art: his sense of beauty and his capacity to admire masterly craftsmanship. It is needful only to remember that this

art strikes, as it were, a different key and follows laws other than those to which modern taste is accustomed.

Once this is realized we step into a world of perfect beauty. We are carried away by the majestic epic quality in the faded frescoes of Kiev, the solemn severity which inspired the now peeling murals of Novgorod, the soft grace of the dark, aromatic cypress ikons of Moscow. We are struck by the invigorating force of the people, which guided the brush of anonymous masters and endowed these formal pictures with so much expression, so much colour, so much human poetry, so much vital truth. We come to the realization that this is indeed great art, and we place Andrei Rublev, the Russian monk of the fifteenth century, on a level with the greatest European painters of his age.

With the passage of time ancient folk art fell into desuetude. Only a very few spots have remained in Russia where peasant craft has kept alive the ancient spark. Most noted among these folk-painting centres is the village of Palekh, in Ivanovo-Voznesensk Region, which even to-day astonishes the world by the delicacy of its work. Up to the Revolution the Palekh craftsmen painted ikons. After the Revolution they began painting miniatures on papier mâché, illustrating books, decorating porcelain, etc. Nothing can compare with the grace of their delicate, colourful designs. Folk art has also been revived in other famous centres of Russian craftsmanship. Toys are made in the neighbourhood of Kirov, formerly Vyatka; bone-carving is highly developed near Archangel; silver is engraved further east, at Veliky Ustyug; and semi-precious stones are cut and polished in the Urals. In pre-Revolutionary Russia the churches and factories prevented the untrammelled development of folk art; it dwindled until only a few bright spots remained. These are now treasured and carefully nurtured by us.

In the eighteenth century art was secularized in the Russian cities and on the estates of the nobility. Monastic ikon painting gave way to portrait painting in the European style. This art, which portrayed tsars, lords and generals, was remote from the people as a whole. But by the logic of creative endeavour it became more human; the artist reached behind the external trappings of man and grasped his spiritual world. In this age of aristocratic art Russia produced Levitsky, a portrait painter of European stature.

On the threshold of the nineteenth century the free spirit of art was pressed into the gilded frame of pompous academism and classicism. The majestic though somewhat dry architecture of the St. Petersburg of that day afforded ample material worthy of imitation; but the art of luxurious togas, artificial poses and theatrical gestures produced

no one more outstanding than Brullov, the most fashionable painter in all Europe. Nevertheless, Brullov's academic "Last Days of Pompeii" betrayed the first inkling of romanticism, brought the first whiff of a fresh, revivifying breeze. In his "Christ Appears to the People," Alexander Ivanov made an approach, inspired by a passionate longing of which he himself was unconscious, towards the expression of real life in art. But Ivanov, reared in the school of classicism, was unable to bear the burden he had assumed and could not advance his art to its logical goal. It took Fedotov, though perhaps much less gifted, to clear the road to realism with the help of the satiric humour of his character paintings.

The mid-century mark was passed, and bourgeois relations, despite all feudalist obstructions, came into being even in Russia. Intellectuals who had risen from the people forged ahead in all fields, crowding out the nobility. Democratic sentiment ran high and brought with it a new, progressive art; the new masters of the brush challenged the order that had outlived its day. The destitution of the peasantry, the parasitic life of the upper classes, the corruption of the government officials and the unhappy position of women, who had no rights, were passionately voiced in their productions. This was accusatory realism. It seethed with wrathful indignation, though as yet powerless.

Nowhere, perhaps, did life bristle with so many social contradictions as in Russia, and nowhere may art be said to have become civic to such an extent.

The democratic intellectuals turned the spotlight of art on the theme of the People. With the theme of the people, the theme of Russia herself made its entry into art.

The foremost Russian artists formed a group which called itself the *peredvizhniki*, the "travellers," because they arranged travelling exhibitions. Some of them at times were lacking in skill. But they won Russian recognition by the love they showed for the people.

The idealistic realism of Russian painting in the second half of the nineteenth century gave way, at the beginning of the twentieth century, to a brilliant impressionism. After the wholesome sweep of the October Revolution, the new life called for depth of content and perfection of form.

Soviet artists have shown talent not only in painting but also in other graphic arts. Outstanding works have been produced by Soviet sculptors, among whom Vera Mukhina deserves particular mention. Her group, "Worker and Peasant Girl," which crowned the Soviet Pavilion at the Paris International Exhibition in 1937, gained great popularity. This wind-swept sculpture in steel expresses the labour enthusiasm that swept the people of the U.S.S.R.

Soviet graphic art carries on the traditions of the Russian classics, as represented by the three great masters of the end of the nineteenth century: Repin, Surikov and Levitan.

Each of these great painters was endowed with a keen, profound appreciation of Russia in combination with an impeccable mastery of the brush. This lent great force to their talent.

Surikov looked upon his compatriots, and upon himself as well, from the viewpoint of the past. His historical paintings were inspired by a passion for self-knowledge. Feverishly he sought beneath the surface the living roots of the tree that gave him birth.

If Surikov is Russian in time, Levitan is Russian in space. This artist has so deeply absorbed the nature of his country that we are unable to say definitely whether what we see in his pictures is a Russian landscape or the Russian soul.

He depicts the ugly, the plain, the sensitive, the boundlessly beautiful. The melancholy spaciousness of "Evening on the Volga," the crystal purity of "Golden Autumn," the stealthy joy of "March," the attractive play of "Fresh Wind," and the fathomless meditation of "Eternal Peace."

Repin, the most gifted of the trio, did not bury himself in the past, or in the contemplation of nature. His powerful brush skilfully delved into the very heart of his country and produced the quintessence of life in pre-Revolutionary Russia.

* * *

Nowhere is the theatre more popular than in Russia. To the Russians this is perhaps the most powerful of the arts. Yet no other art has had such difficulties in Russia as the theatre. In Russia the theatre had to use sheer force before it could come into its own; it had to brave the prohibitions of the Church and fight the inertia and hampering restrictions of the autocracy.

Born of the people, the theatre in Russia was wrested away and divorced from them. The history of the Russian theatre is one of a gradual return to its original source, to the Russian people, to life as it really is. And when finally this goal had been almost reached, the Russian theatre became a world theatre.

The ancient Russian folk plays were rich in colour. The theatricalized dances and singing at weddings were vividly expressive. The people created the poetic rituals of the spring and Shrovetide celebrations. But all this shrivelled up when touched by the withering breath of the small shopkeepers' urban culture.

Ancient Russia had its mirth-makers in the wandering bands of merry-andrews. The keen jest, the agile movement, the colourful garb, the warbling pipe—all this was native talent. But the austere Middle Ages put a ban on these amusements, too. Laughter was proclaimed a sin, singing was considered the work of the Devil, the *dombra* and *gusla* (string instruments) and masks were burnt. Church edicts threatened the merry-andrews with the knout in this world and with fire and brimstone in the next.

And when the Russian people, early in the eighteenth century, joined in the stream of European culture, the theatre did not grow again spontaneously on Russian soil, but was imported from abroad. German, Italian and French troupes appeared in steady succession. Their art found its way to the aristocracy, but did not appeal to the people. Western tastes prevailed, because they were fashionable. But the ban on the theatre was lifted, and native Russian theatrical shoots immediately began to appear. They had to break their way through heavy foreign traditions, but they pushed through with amazing vigour. By the middle of the eighteenth century a Russian troupe founded by Volkov was performing in St. Petersburg. The very first Russian actors could claim among their number such gifted interpreters as Dmitrevsky, who is said to have been a worthy rival of Garrick.

The public was so enraptured that Russian theatres sprang up one after another throughout the country, in the two capital cities, in provincial towns, and even on the estates of the nobility who formed their own private troupes, made up of serfs.

Such was Russia's love of the theatrical. Hence the sudden awakening and reassertion, though in a different form, of her love of play, impersonation, spectacle, the antics of the clown, ritual songs, and action.

The forms were exotic and remained in vogue for decades.

But little by little Russian life captured the stage, dismissing the bombastic, artificial, stilted mannerisms. Plays that were Russian in spirit as well as theme appeared. Fonvizin's *Adolescent*, Griboyedov's *Wisdom Brings Sorrow*, Gogol's *Inspector-General*, and later the plays of Ostrovsky. And in Schepkin the Russian actor appeared, Russian not only by extraction but also in performance.

Schepkin was a serf, the son of a serf. Only his superior talent and strong will enabled him to go ahead. It was with difficulty that he purchased his freedom and made his appearance on the Moscow stage.

The secret of this great actor, to put it briefly, was his keen perception of life. He brought to the stage the truth about Russian

life. He knew it well, for he himself had sprung from the people. He felt emotionally everything that was Russian, and he revealed these emotions naturally and simply on the stage. "Schepkin was the first man in the theatre who was not theatrical," was the comment of his contemporaries.

Schepkin in the Moscow Maly Theatre was the first of a brilliant galaxy of theatrical performers, including Sadovsky, Fedotova, Ermolova. These remarkable actors and actresses of the nineteenth century crystallized the public's conscience on the stage. Muscovites used to say: "We were taught at the Moscow University, but were brought up in the Maly Theatre."

People were drawn to the theatre to "study man" at the feet of these surpassing exponents of sincerity. Still, there was no great theatre in Russia as yet.

There were great actors, but there was no great ensemble. The theatre was bogged in the mire of routine fostered by bureaucracy and reaction. The spark of genius could scarcely pierce the deadening gloom of convention. With Schepkin truth arrived on the stage, but he could not vest it with the authority of a general law, could not preserve it. That required a higher degree of social maturity, and a new prophet. The time and the man arrived with the appearance of Stanislavsky at the turn of the century.

The stage demanded regeneration, it thirsted for genuine truth in art. But it was easier to found a new theatre than to change the old. New wine needs new bottles. The young actor and theatrical director Konstantine Stanislavsky and the young playwright and theatrical teacher Vladimir Nemirovich-Danchenko came by different paths to one and the same conclusion. Though barely acquainted, they intuitively divined each other's ideas. On Nemirovich-Danchenko's initiative they met and sat in conference until the clock had gone round twice. In the sequel, these two men of energy and initiative founded the Moscow Art Theatre. This was in 1898.

Forty years later Stanislavsky died. Not long ago Nemirovich-Danchenko followed him to the grave. But their theatre lives on—a shrine of Russian culture, one of the finest theatres in the world.

In this theatre everything is novel. In order not to break the illusion, the orchestra did not play between acts, nor did the actors come out for curtain calls. Entrance into the auditorium during the performance was forbidden. Actual acting was no longer confined to the main characters, but involved the entire ensemble, which was guided as a whole by the genius of the producer. The usual bunch

of extras was replaced by an animated crowd. Every detail was finished, polished, however trifling. The repertoire contained no plays that pandered to the tastes of the vulgar. But even this was not the most salient point.

The most characteristic feature was the human quality of the acting, which inaugurated a new era in the art of theatre.

Truth in art was the new device. At first this was taken to mean naturalism. Theatrical properties were replaced by museum pieces.

But the stage soon outgrew this external realism and turned to psychological truth. The true rendering of emotions, the reflection of life's experiences and deep understanding of personality, became the basis for the stage performance. This was internal realism.

Chekhov's plays brought sincerity of feeling to the boards of the Art Theatre. Through the outer simplicity of *The Seagull*, *The Three Sisters* and *The Cherry Orchard* one sensed the inner complexity of their poetry. A pause became more eloquent than words. A mood left a stronger impression than a clash. People grasped the extraordinary in what seemed to be ordinary. In other words, they turned the spotlight inward on their own souls.

The acting was based on the psychological "system of Stanislavsky." This "system" was really a whole school of theatrical art proceeding on the principle that an actor must "live his part." He must exert his utmost will and emotional powers to imagine himself in the position of the character he plays, "to get into his skin" (Schepkin). Then each gesture, each word, will have its inner justification.

The Moscow Art Theatre has presented many different plays in the half-century of its existence, performed in various styles and presenting various ideas. It has followed in the footsteps of Russian life, responding, by an artistic reflex, to all its ups and downs. There has been every variety of performance—the brilliant lightness of *The Marriage of Figaro* and the ponderous *Brothers Karamazov*, the living flesh of *The Lower Depths* and the symbolical abstractions of *The Blue Bird*, the individualistic problem play *An Enemy of the People* and the revolutionary passion of *The Armoured Train*. But they all have had one thing in common, Truth.

Stagecraft, as seen at the Moscow Art Theatre, has reached such fullness of perfection that at times it has overflowed, giving rise to offshoots. In the resulting new experimental studios theatrical forms were severed from content and became self-sufficient. These were the beginnings of "leftist" tendencies.

"The actor is an actor; hence, he should act and not pretend."
"The truth of the stage is not the truth of life." "The theatre is a theatre; hence, it should be conventional."

There began a period of theatricality *par excellence*—of theatricality for its own sake. It reached its apex of beauty and perfection in Vakhtangov's production of *The Princess Turandot* at the third studio of the Moscow Art Theatre. The actors did not play the play, they played the actors who played the play. They did not play Turandot, but played at playing Turandot.

Others went to the opposite extreme. The curtain was abolished, stage decorations replaced by wooden structures; instead of costumes the actors donned a standard uniform; they substituted gymnastics for natural movements.

But these extravaganzas passed, and only the genuine remained, superb stagecraft. Painting, music and plastic art entered the drama. Russian shows dazzle the world.

At the beginning of the twentieth century Diaghilev took the Russian ballet abroad. Its performances were staged with such artistic understanding, with such unexampled brilliance of decor and costume, with such freshness and power in music and gesture, that all Europe was taken by storm.

Later the Moscow Art Theatre made a triumphal tour of Europe and America. It was conceded on all hands that it had reached the pinnacle of theatre art.

Then the world saw the young Soviet theatre. The October Revolution, which ushered in an era of free creation, an era in which the people began freely to build their own happiness, suffused the leading forms of the Russian theatre with a profound content that was genuinely of the people. And to the people, its original fountain head, the Russian theatre now returned, raised on a high cultural plane. The Russian theatre came into existence later than other theatres, but it grew so quickly that it soon excelled its tutors.

Russia has also developed a native art of cinema. The films produced by Eisenstein, Pudovkin, Dovzhenko and the brothers Vasiliev are dynamic presentations of Russian life.

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The womb of history that gave birth to the people at the same time brought forth song. Singing mothers have rocked cradles, and song has united man and maid, song has made merry the wedding feast and has lightened man's heavy labour, song has shortened the tedium of long winter evenings and in song mourners have lamented their dead.

Composed anonymously, folk songs have changed imperceptibly from generation to generation. The Russian peasant chorus sang

straight from the heart. With light touch it improvised here and varied there, always improving and polishing, never singing the same song twice the same way. This process of popular selection through the ages has made of the Russian folk song a glittering diamond—the crystal reflection of the Russian soul. Here we find unlimited scope, fathomless feeling, unaffected beauty. Long-drawn-out notes sigh of the grief of a freedom-loving and downtrodden people. In contrast there sound the notes of irrepressible joy that comes from an awareness of intrinsic power. Heartfelt outpourings, tenderness and humour. The Russian smiles through tears as he listens to the old folk songs, for in them he recognizes his own portrait.

They have a peculiar modal structure of their own, different from the usual major-minor of the West; a quaint rhythm which often refuses to fit into the symmetrical scheme of classic western music; and sometimes they produce odd measures, such as $\frac{5}{4}$ or $\frac{7}{4}$; the ornate chanting of exclamatory monosyllables, such as "ekh," long sustained over many different notes; the play of undertones accompanying and varying the basic melody; the smooth laconicism of wise and poetic texts—these are the elements that make up the peculiar charm and beauty of Russian folk music.

Though at first the Church opposed the "diabolic" art of song, and later urbanism degraded and declassed it, turning its stanzas into doggerel, the folk song did not die; its roots were too firm. However it was not song that gave birth to secular music in Russia—that was brought from abroad in Peter's time, just as the architecture of the capital and the court theatre had been brought in. But this artificially transplanted music held short sway, for the Italian fashion found no foundation here. Russian music had to draw from the living source, had to heed the voice of the people, to turn to Russian folk melody.

But at the beginning, in the eighteenth century, Russian folk melody was forcibly thrust into an as yet ill-mastered foreign mould. This western music had to be treated by the fire of Russian creative art in order to prevent the union of Russian song and advanced western music from being mechanical instead of organic. It was necessary to take from the world in order to give the world a Russian product. This was achieved in the first half of the nineteenth century, by Glinka, a master rich and wholesome, of unalloyed purity and exhilarating freshness, and as lavish as Russians are.

Glinka was the first Russian composer of European stature. He did not copy Russian melody, he reworked it with the skill of a virtuoso of European training. To him Russian melody was not merely "material to be drawn upon," but was musical thinking. Russian

music became Russian—and as such it stepped into its rightful place in Europe.

Operas were composed in Russia before Glinka, but only Glinka's operas measured up to the European standard. The radiant orchestration of *Ruslan and Ludmila* is the work of a master who has comprehended and mastered Mozart and Cherubini; the solemnly joyful apotheosis of *Ivan Susanin* challenges the finale of Beethoven's Ninth Symphony. And withal they are genuinely Russian operas.

Romances were composed in Russia before Glinka, but only Glinka's romances blended the melodic quality of Russian song with the artistic cantilena of Western Europe. The graceful *Venetian Night*, the touching *Doubts*, and the sparkling *Toast Goblet* are first-class music of the European school. And withal they are genuine Russian classical music.

Instrumental music was composed in Russia before Glinka, but only with Glinka did such music scores cease to be translations of things alien, Western European, and become native texts expressed in Western European style. The music for *Prince Kholmsky* is in the style of *Egmont*, and *Kamarinskaya* in the style of the rhapsodies of Liszt. But they are genuine Russian symphonic music. In the brilliant *Kamarinskaya*, which might be called the most Russian gem of the whole of Russia art, two folk themes follow one another, enriched in Russian fashion by a pattern of muted voices.

Glinka gave European music a new theme: Russian melody. But he did not, perhaps, give it new forms, did not raise world music to a new, hitherto unattained level of mastery.

Unity of new content and new form, a coupling of Russian themes with Russian skill, was achieved by the creations of the "Big Five," who followed Glinka. They were a fraternity of Russian composers of the second third of the nineteenth century: Borodin, Rimsky-Korsakov, Mussorgsky, Cui and their leader, Balakirev.

The Big Five represent the national consciousness of the Russian intellectuals, matured and embodied in music. They turned their attention to the life of the people, showing, however, more interest in the past than in the present; they created fresh, native forms, not untouched, however, by the influence of Liszt, Berlioz and Schumann; theirs was a pictorial realism with a tendency, true enough, towards idealization.

These five composers were united by their common national music, but each one of them contributed something peculiarly his own.

The genius of Borodin is best revealed in his symphonies and in his opera *Prince Igor*. He is all Russian—no over-hasty expansiveness, no pettiness, no fuss over trifles. On the contrary, there is something

refractory about him, an atmosphere of unhurried preparation, of waiting for the proper stimulus, that is often taken for sloth. But it is not sloth—it is power. When a worthy aim has been chosen and the decision has been made, everything is set in motion, and nothing can still the awakened, turbulent forces. A titan's music—with calm joy he feels the strength alive in his brawny limbs. He looks for someone to have a friendly tussle with; he roars, but gently, trustingly; he wears his heart upon his sleeve. But beware of giving offence—he will let you feel soon enough the full impact of his biceps.

Rimsky-Korsakov, in his *Snow Maiden*, *Sadko*, *Golden Cockerel* and other operas, introduced Russian fairy tales into music, combining genuine human characterization with fantastic subject-matter. He delved into the distant past of the people and unearthed precious gems of fantasy in folk art. He drew the Russian scene—nature, customs, life, with pantheistic brilliance and vivacity, and yet it was all taken from concrete historical sources and stylized in fairy-tale form.

Mussorgsky, in his wonderful operas, *Boris Godunov*, *Khovanshchina* and *Sorochinskaya Fair*, as well as in his vocal chamber music, came nearer than other composers to a life-like depiction of man, to the intonations of living Russian speech. He wanted all music to be derived from speech intonations. In his quest for virile music he came directly to the people. Thus his art became truly honest and profoundly dramatic.

Thus, these great composers, each in his own way, took the people as their theme, and each of them was highly instrumental in promoting music as an art, as a skilled craft. The echo of their music resounded not only in Russia but throughout the world. New content united with new form, it was this integration that astonished the musical world.

Borodin not only wrote Russian music, but wrote it in Russian—his was a tonality that partook of the old, the folk element, and also of the new, the Borodin element. Herein lies the durability, power and glory of art: It picks up what is eternal and profound, and then gives utterance to it in its own way. And these beautiful songs of a healthy race, with their quiet, self-confident Borodin tempo, their virile, living, Borodin rhythm, their free, euphonious Borodin melody, have taken their place in the world of European music.

Rimsky-Korsakov told of Russian myths, of ancient Russia, of Russian scenery, of Russian love. His narration was so vivid, so seasoned, so sonorous, that the whole world gave ear. The inscrutable artistry of his orchestration, which creates an almost visual illusion, became part of the music of all lands, astounding even so great a master of musical colour as Igor Stravinsky, of Russian extraction and world-wide fame.

Mussorgsky, in his search for living Russian music, revealed so many new intonations, made so many musical discoveries, that he became an innovator, not only in Russian but in world art. It was from him that the Western European impressionists obtained their schooling, and it was at this fountain that Debussy drank.

Beside the Big Five stood the mighty figure of Tchaikovsky. He was a happy combination of profound sincerity and business-like professionalism, which made him one of the world's most successful composers.

Whereas the Big Five took the national principle as their guiding line, Tchaikovsky set himself no preconceived objectives. He did not search for things "Russian," no matter what the cost, nor did he try to devise new forms. He wrote as his genius prompted him.

Tchaikovsky, of course, loved his native land. As far as he was concerned, no luxuriant Italian landscape could take the place of a bare glade on the outskirts of Moscow. But his interests were wide, not local. He sought those things in life which united men, not those which divided them. He wanted happiness and feared death. He yearned for the beautiful, he worked, grew tired, laughed and wept—as do all men on earth. And this whole human world, from the dreams of childhood to the weariness that comes before death, he translated into music.

The universal humanity of his work, in form and content, caused Tchaikovsky to be regarded as a "Westerner." But with the passage of time we have realized that Tchaikovsky's pan-humanism is cut out of Russian cloth. The general presupposes the particular. Unconsciously, perhaps, but nevertheless ineluctably, Tchaikovsky revealed the entire complexity of the soul of man in general by taking the Russian as his example. Tchaikovsky's genius made Russian music speak of all mankind and for all mankind. He revealed the universal qualities in the Russian. He showed that what appeals to our ear appeals, for the most important part, to the ears of all. He both exalted the Russian and enriched the world.

What is there Russian in Tchaikovsky? The Russian song motifs? Yes, most assuredly; but even more so the entire atmosphere he creates, the emotions he evokes, the whole manner of life he depicts.

We shall not carry our search for Russian folk melodies into *Eugene Onegin*. They are there; but even without them we are held entranced by the intimate, unpretentious, poetic Russian spirit of this opera. Granted that many of the songs are not of Russian ancestry; yet they contain the Russian's sensibility to the world, the atmosphere of their epoch.

We will not search high and low for Russian melodies in the *Troika* of the First Symphony—it is Russian anyway!—the blanket of snow, the long wintry road, the dreamy sleigh-bells, the exquisite lyricism. Yet it is not ours alone, it belongs to all, is loved by all.

After Tchaikovsky, Rakhmaninov and Scriabin added more lustre to Russian music. The list of outstanding Russian composers has been lengthened in Soviet days by the addition of Shostakovich, Prokofiev, Myaskovsky and Khachaturian. Brilliant technique has been achieved by Soviet performers, who more than once have won honours at international contests of pianists and violinists.

The greatest of Soviet musicians is Dmitri Shostakovich. After persistent quest he arrived at a synthesis of the buoyant spirit of the new age and the crystallized cultural traditions of the old.

Shostakovich wrote his famous Seventh Symphony in besieged, embattled Leningrad, when grim days had come upon his people. The enemy had descended upon the land and threatened its destruction. This was not an enemy in the abstract, but very real; the Hitlerites, self-satisfied to the point of vulgarity, cruel to the point of bestiality. The people defended themselves. These were Russians, Soviet citizens, torn from their peaceful pursuits, diverted from their creative aims. The German theme and the Russian theme.

But what we hear is more than beleaguered Leningrad, more than terrible German aggression, more than the incredibly staunch resistance of the Russians. We hear the tragic hymn expressive of the struggle for the right to think and feel, for the right to lead a free and happy life. This theme is not of Russia, this theme is of the world.

* * *

The Russian people have revealed their talents in generous contributions to the various fields of culture, but they have attained the summit of their native genius in the domain of literature, in that sphere of art where emotion blends most intimately with thought, and where social life is most directly and fully reflected.

Here as in other fields the Russians began to display activity comparatively late, because of their protracted isolation from the advance of world history and culture. But, once having begun, they progressed so rapidly that in the nineteenth century the whole world conceded a conspicuous place to Russian literature.

Russian literature is built up from the Russian language and Russian folklore—the creation of the masses themselves. These seeds gave rise to the written word. This in turn has developed with the progress

of culture under a variety of different influences. The vicissitudes of the nation's life have greatly influenced it.

The Russian language is one of the richest, most flexible and most precise. Its vocabulary is tremendous, its intonations varied, its accentuation free, its sentence structure elastic, its sound melodious. It may not be amiss to quote Turgeniev, who declared in the time of the autocracy: "In days of doubt, in days of anxious meditation upon the fate of my country, thou alone art my aid and support, o great, powerful, truthful, unfettered Russian language! . . . It is impossible to believe that such a language was not given to a great people!" (1882.)

Russian folklore is unusually rich and poetic. The eye of the people is observant, their ear quick, their heart responsive, their mind receptive, their speech colourful, and the fount of folklore never runs dry. The Russian songs, proverbs, riddles, fairy tales and epics live to-day and will live to-morrow.

Epics composed to the strumming of strings many centuries ago have survived to this day in the Far North, bringing down to us the primordial poetry of the Russian people, their epos in its most genuine form. The core of these epic songs cannot but be the core of the Russian soul. Of what do they sing? They sing of the feats of the "giants," of the mighty legendary Russian heroes who defended their native soil. They seem to say: The Russian has struck deep roots; the Russian genius cannot be pulled up, cannot be destroyed. The mighty roots have gone too deep into the soil.

The most popular hero of these epics is the "giant" Ilya Muromets, mighty, staunch, independent, incorruptible, restrained, tranquil. Such was the ideal sculptured by the Russian people. He frees cities of enemy forces, clears the roads of robbers, drives out the Tatar hordes. Intrepid Dobrynya Nikitich and merry Alesha Popovich fight shoulder to shoulder with Ilya in the steppe in defence of Russian homes. In Novgorod, a young Hercules named Vassili Buslayev gives free reign to his venturesome spirit. But the strongest of them all was Mikula Selyaninovich, a simple ploughman, an ordinary Russian muzhik. Independence and might—independence safeguarded by might and might augmented by independence—constitute the pith of the Russian epics.

The same love of country pervades the first extant written Russian epic, *The Lay of Prince Igor*, famous in literature and translated into all the principal languages of the world. It was written by an unknown author of the twelfth century, during those desperate years when, for a time, the might of Russia was shaken and her independence threatened. It is the story, full of poetry and grief, of the unsuccessful campaign undertaken by Prince Igor of Novgorod-Syever'sk against the southern

nomad Polovtsi in 1185, on the eve of the Tatar-Mongol invasion. Rus was weakened by internecine warfare among the princes, and *The Lay* is an impassioned call for unity and for the defence of Rus.

. . . "Said Igor to his retinue: 'Brothers and warriors! Better, far better to be dead than live a prisoner. . . .'"

There was secular literature in Russia even before Peter I, but most books were still ecclesiastical. It was not until the eighteenth century that literature really developed. It soon made rapid strides. At first, however, this literature had little in it that was original. It imitated the classicism fashionable in Europe at that time. And hence it was far removed from the realities of life. The spirit of Boileau reigned supreme.

Only gradually did sufficient cultural forces accumulate in Russian society to set Russian art on its own legs. And then Pushkin appeared.

Pushkin is the Lomonosov, the Glinka, the Schepkin of literature. With the aid of world culture, not merely superficially comprehended but thoroughly digested, he made Russian literature a native literature. And it was as such, as a native Russian product, that Russian literature became a thing of value to the world.

Pushkin's entrance upon the literary scene was of extraordinary importance. His works have retained their youthful vigour; they have lost nothing with the lapse of time. It is from him that real Russian literature dates.

His capacity was enormous and he was the great initiator. He was the first to write genuinely Russian verse, flexible, beautiful, plastic, and genuinely Russian prose, lucid, exact, responsive, realistic. He created the Pushkin outlook on life, clear, wholesome, all-embracing, sagacious, human; which has often imparted new strength to the Russian people in moments of trial. "Hail, sunlight! Hide, darkness!"

Pushkin initiated the rapid rise of Russian literature.

Lermontov, suffocating in the stifling, repressive atmosphere of tsarist despotism, applied the seething energy of his genius to the poetic portrayal of strong, rebellious men, men more contemptuous, be it said, than protesting. His "irritation at his captive thought" is extraordinarily tense and at the same time inexpressibly melancholy.

Gogol paints the depravity and the horror of the world he lived in with great power of penetration, and inexhaustible faith in the people and in Russia. Through his overwhelming grotesques, "through the laughter that the world could see," we feel the "hidden tears the world cannot see."

Turgenev draws the moribund and the nascent, the collision of "fathers and sons." He is a keen observer of life in his native land.

His characters are admirable portraits, his landscapes depicted with poetic exactness, his language a Russian of exquisite delicacy.

Dostoyevsky's fearful frankness stirs the inner recesses of the human soul, searching for that primordial single root from which sprang good and evil, seeking with his morbid keenness of mind both happiness "unbearable" and "delectable" despair.

The works of Leo Tolstoy, rare master of psychological analysis, are illumined by the noble theme of the good in humanity. At the same time they reveal the vast diapason of the human soul in healthy beings, to whom "life is all."

Chekhov tells of the "grey and tedious" world of the petty lower middle class of pre-Revolutionary Russia. A sad smile plays on his lips as he narrates his sincere and unaffected story.

Gorky, to whom "the word 'man' rings proudly," rises from the lowest depths of Russian life. His vivid, courageous creations express the firmness of will of the toiling populace that is marching on to revolution, to freedom, to the unhampered development of all its creative forces.

The mighty torrent of Russian literature was guided by progressive, high-principled critics to whom civic duty was the ultimate criterion. Belinsky, Herten, Dobrolyubov and Chernyshevsky were outstanding publicists and revolutionary tribunes who successively acted as the spokesmen of the people, a people thirsting for independence.

And when the country had crossed the divide of the October Socialist Revolution, Soviet literature began to help the liberated people to build a new life and a new culture. The reading public grew by leaps and bounds.

A mighty force in the Revolution was Mayakovsky's dynamic verse. For an artistic continuity, linking classical with contemporary Russian literature, we look to the writings of Alexei Tolstoy. New authors, sprung from the people, have come to the fore. One of these is Sholokhov, who has adopted the best traditions of Russian realism in his descriptions of the new Russian life, which are real works of art.

Russian literature of the nineteenth century was recognized throughout the world. Pushkin was published in almost fifty languages beyond the borders of Russia; Turgeniev influenced the French realists; Dostoyevsky conquered German literature; Chekhov became a favourite in the Anglo-Saxon countries. Perhaps no writer has ever enjoyed such world-wide recognition and fame during his lifetime as Leo Tolstoy.

Wherein lies the power and greatness of Russian literature? In its humanity and truth.

Russian literature is an amazing revelation of the Russian soul. The Russian characters on its pages are living flesh and blood, and this is so because their story is honestly related. The Russian characters are handled lovingly, but they are not painted with gold.

Many heroes of classical Russian literature display a certain lethargy, a self-sufficient complacency. Life was ugly and many were broken. There was serfdom, and there was the autocracy. The old order relieved some of the necessity to work. It thereby weakened them, while it condemned others to exhausting, joyless, involuntary drudgery and made them habitually indifferent.

But no hardships in life could rob the Russian man of his wide sweep and genuine spiritual strength, of his vivacious mind and versatile talent, of his deep human feelings, of his thirst for freedom for himself and for all, of his capacity to move mountains by his all-conquering enthusiasm.

* * *

And the Nazis wanted to destroy the Russians. They took it into their heads to exterminate everything Russian. But what they have achieved is just the opposite of what they set out to do.

The Germans knew that the Russian front would extend from the Black Sea to the Barents Sea. But they did not take into consideration that it would also extend back into history, from to-day to the distant past. Russia donned the mailed fist and in it gathered all her imponderable forces; her military prowess, which had left its imprint throughout the ages, her regenerative faculties, tested in the course of history, and her national spirit, a supremely creative force. The Russians' love of their native tongue, their art, their country, has flamed ever brighter.

As the war progressed the Russians grew stronger, not weaker.

CHAPTER VI

HUMAN DIGNITY

On came the Germans! They not only seized our territory, laid waste our economic resources and trampled on our culture. They tried to demolish the entire order of our life.

On the territory they seized our social system was suppressed, our principles of social intercourse abrogated, our moral standards outraged.

These foundation stones of our life had been laid by our people in October, 1917.

Ages of determined struggle and labour had brought the Russian people to the October Revolution, which gave them the right to hold their heads high and keep their backs straight, the right to free labour, the right to develop their abilities without any curbs or restrictions. The fire of revolution had forged in them a profound and indestructible sense of the dignity of the human being.

Then arrived the German commandants who compelled Soviet citizens to wear identification tags around their necks, of which this is one:—

“No. 715. Ivanovka village.”

What righteous indignation must dwell in the breast of a man thus branded like a slave!

* * *

Russian history recalls the difficult road of a people fighting for liberation on its own soil.

By a long struggle against external enemies the Russian people maintained their independence. They not only preserved their statehood, but also extended their borders from ocean to ocean.

However, independence in foreign relations did not signify freedom at home. The working community laboured always under the weight of the domestic yoke.

In tsarist Russia the nobles possessed estates, while millions of peasants barely existed on tiny plots of land. The farm hand and

tenant farmer were kept by their poverty under the heel of the landlord. A cruel exploitation of labour prevailed in mills and factories. The luxury of the few contrasted with the poverty of the many. Long was the period of gestation of the Socialist Revolution in Russia. At last, in 1917, the pent-up revolutionary forces exploded.

The Revolution has created in Russia a new, Socialist, society.

The right of persons to own the income from their work, articles of personal use, their dwellings and subsidiary household goods is guaranteed by Soviet law. But means of production may be privately owned only if operated without hired labour. No man may exploit the labour of others, and there are no such exploiters in the U.S.S.R. The land and its natural deposits, the factories and mills, the railways and banks all belong to the State; and collective farm property belongs jointly to the members of the respective collective farms, whose land is tilled by their joint labour.

In the U.S.S.R. the body politic consists of the working class, the peasant class and the intelligentsia. Neither money nor estate nor birth determine position in society; that depends solely upon one's personal ability and energy expended at work. This system has confirmed the Russian in his respect for human dignity, and has established as the foundation of his nature the idea of genuine civic freedom.

The aged are supported by the State, but the able-bodied must gain their livelihood by their own labour. But this principle would be an empty phrase if labour were not a right as well as a duty. In the U.S.S.R. the right to work is guaranteed by law: the State is obliged to provide work for all. This is possible because in the U.S.S.R. there are no economic crises and no unemployment. These do not exist because the country's economic life develops according to plan. And it can develop according to plan because the means of production are in the hands of society, which guides the national economy as the general welfare demands. This system has made possible the abolition of Russia's economic backwardness. This system has guaranteed the Russian people against poverty and made it possible to raise their standard of life. This system has imbued the Russian with confidence in the future, and hence with confidence in his own powers, with faith in himself.

* * *

In tsarist Russia there could be no equality of political rights. True, the tsarist government set up a State Duma; but it imposed such high qualifications for the franchise and rendered the Duma so impotent.

that there was great truth in the remark let slip by the Chairman of the Council of Ministers, Kokovtsev, who one day declared: "Thank God, we have no Parliament yet." What rights could the labouring people have, if even industrialists had to remain largely inarticulate?

On the ruins of this autocratic bureaucracy the Russian people built up the power of the working citizens. Centuries of disfranchisement had taught them the need for complete democracy. Elections were made universal, equal and direct and the secret ballot was introduced. The right to elect or to be elected is not restricted by property, residential or educational qualifications, nor is there any discrimination on account of sex or race. Any citizen who has reached the age of eighteen has the right to vote and may be nominated for any elective office. Among the members of the highest Parliament of the land, the Supreme Soviet of the U.S.S.R., there are scientists and miners, actors and milk-maids, generals and shepherds—those who by their excellent work in any field have won the confidence of the people.

In this way the working people of town and country wield their power. In this way a sense of responsibility for the welfare of the State is developed in all citizens, and the conflict of interests between State and individual disappears.

* * *

In tsarist Russia there was no sex equality. Among the ancient Slavs woman was not on a lower plane than man. But with the advent of the Byzantine order in the Moscow State, her status was reduced to that of a household slave. The women of the people were worn out by hard toil, while until the time of Peter I the women of the upper classes were kept secluded in their quarters and were not permitted to see their future husbands until they were led to the altar.

Even after Peter, woman was deprived of many of the rights enjoyed by man. Up to the very Revolution the Russian Code of Laws contained the archaic provision: "A wife must love, respect and implicitly obey her husband. . . ." She was legally obliged to follow him wherever he might go. Divorces were very difficult to procure.

After the Revolution women in Russia immediately received absolute equality of rights in every respect: the right to work, the right to equal pay for equal work, women's suffrage. A special law provides for large subsidies from the State budget for mothers of large families. Women now direct big enterprises and even entire

branches of the national economy, and stand at the head of People's Commissariats. Women can be elected members of the Academy of Sciences. As many as 189 women hold seats in the highest organ of State power, the Supreme Soviet of the U.S.S.R., out of a total membership of 1,143.

* * *

In tsarist Russia freedom of conscience did not exist. The Orthodox faith was the recognized State religion. The State interfered with the religious convictions of its subjects. Changing from the Orthodox to another religion was a punishable offence. All children of parents of the Orthodox Church had to be baptized. A marriage was considered legal only if performed under the auspices of the Church. The majority of the Russian people were believers, but even the believers longed for freedom to worship as they saw fit.

Hundreds of thousands of people, guilty only of belonging to some forbidden sect, were forced to leave their homes and seek safety in Siberia or live somewhere abroad. Thus, for example, the Dukhobors received permission to emigrate abroad through the intercession of Leo Tolstoy, and settled in great numbers in Canada.

The Revolution freed the conscience of man. Religion became a person's private affair. The Church was separated from the State, and the school from the Church. Religious compulsion ceased. Many openly espoused atheism, others remained believers.

* * *

In tsarist Russia there was no national equality. Under Ivan the Terrible the Russian State became multi-national. Less developed peoples were incorporated in it, Tatars, Chuvashians, Bashkirs and many others. In the nineteenth century Russia's expansion brought within her borders the peoples of the Caucasus and the peoples inhabiting Central Asia.

In certain respects this was a progressive development. It broke up the tribal patriarchal ways of life in these outlying non-Russian national areas and brought them into the world system of trade. Their archaic economic system was influenced by the more modern methods of production employed by the Russians. But at the same time it condemned these annexed and subjugated peoples to slavery under the heel of Russian tsarism. They were not granted political rights, and were contemptuously referred to as "foreigners." A tight lid was clamped down on their national culture. Some of these

nationalities had no written language or records; others only had Prayer Books written in their own tongue.

These different peoples, distributed pell-mell in a racial patchwork, lived in mutual enmity. Tsarism believed in the maxim: "Divide and rule." In these border regions Russian merchants made their fortunes by bleeding the "foreigners," and this economic exploitation afforded fertile soil for the growth of enmity among the different nations. Where there was no division of interests there was also no dissension and no bloodshed: Russian, Latvian, and Jewish workers began to fight side by side like brothers against their common enemy, tsarism.

The Russian people entertain no feeling of national superiority. Russian culture has imbibed and assimilated the finest cultural achievements of other countries, without a grain of prejudice. Many of the greatest works of Russian literature portray and propagate genuine friendship among nations, and literature is the mirror of a nation's soul.

With the disappearance in the U.S.S.R. of the exploitation of man by man there remains no basis for the enmity that rankled so long among the numerous nationalities of our country.

National equality became the law of the land in the very first days of the Revolution. Any restriction of rights motivated by race or national prejudice and any propaganda of racial or national superiority are severely punished by Soviet law.

Lenin said: "We want a *voluntary* union of nations, a union that will not permit of any application of force whatsoever by one nation against another, a union that will be based on the most complete confidence, on a clear recognition of fraternal unity, on wholly voluntary agreement. . . ." Such a commonwealth was established by the formation of the Union of Soviet Socialist Republics. It consists of sixteen voluntarily united and completely equal republics: Russian, Ukrainian, Byelorussian, Azerbaijanian, Georgian, Armenian, Turkmenian, Uzbek, Tajik, Kazakh, Kirghiz, Karelo-Finnish, Moldavian, Lithuanian, Latvian and Estonian republics. Smaller nationalities form autonomous republics and regions, national areas and districts.

Every Union Republic has the right freely to secede from the U.S.S.R. But not one of them has desired to make use of this right, because the union of these republics is built on a firm foundation—on a community of political interests, on the obvious advantage of a common defence, on a historically determined division of labour.

But the Russian people did not limit themselves to the establishment of equal rights for each member of the Union. Equality before the law does not necessarily mean equality in fact. The Revolution

found the peoples of Russia on widely different levels of economic and cultural development. In order to make the equality between all these peoples complete, the backward peoples had to be brought up to the level of the advanced. And the Russian people took this upon themselves, devoting enormous resources and effort to help the economically weaker republics.

So much capital was invested in the national republics that the rate of economic and cultural growth in the national areas was higher than in Russia proper. Many Russian engineers, doctors, scientists, and highly qualified skilled workers were sent to the border regions, and the universities and colleges of Moscow and Leningrad opened their doors to the young men and women of Tajikistan, Kirghizia, Bashkiria and Yakutia. The big brother did everything to help the younger brothers to climb up to his level.

And with the help of the Russian people the Uzbeks and Kirghizians, the Azerbaijanians and Karelians, the Kazakhs and Turkmenians experienced an economic and cultural prosperity unparalleled in their history.

Where formerly a gnarled stick of pine wood had scratched the soil, a powerful tractor now pulled a modern plough, and behind the wheel sat the nomad of yesterday. The ancient site of tattered nomad tents was now occupied by the concrete buildings of first-class factories. The lathes were run by women who had only just discarded their heavy horse-hair veils, the *chachvan*, that used to hide their faces. In a land where almost all the people had been illiterate there now appeared scientific institutes and laboratories, staffed by scientists who had been born in *yurtas* and whose sole childhood schooling had been repeating verses from the Koran. . . .

Is it not obvious that all this could not but strengthen the mutual friendship of the Soviet peoples, could not but fuse them into one single whole?

And that was exactly what happened.

When we speak of the Russians, we do not oppose them to the Ukrainians, the Georgians, the Tajiks, or any other people of the U.S.S.R. All of these peoples have the same aim in life, the same battle to fight. The Russian is only an elder among equals. On a territory occupying one-sixth of the earth's surface, the Russians were for a long period of time in the van of a historical process, and the Russians brought that historical process to the stage of equality and brotherhood among nations.

In freeing themselves, the Russian people freed also the other peoples of the U.S.S.R.

* * *

In the course of centuries Russia's toilers created a powerful State, and established their military, economic and cultural traditions. In October, 1917, they took the State into their own hands and rebuilt it according to their own ideas, for their own good. And then came the Germans, bent on enslaving the Russian people. Behold their doings!

A man of the most progressive political convictions wears a tag, a convict number, round his neck! Another, whose father's blood, if not his own, was shed for the victory of the Russian Revolution, is now inventoried as a work tool in the Ostland colony! A man imbued with dignity and self-respect is sentenced to twenty-five strokes of the lash by a German landlord!

Can such humiliation be borne?

Here is the source of hatred—the implacable, blinding hatred that makes one grind one's teeth, that leads to the sacrifice of all, of life itself, in battle.

Much becomes clear. Here is the source of that strength of spirit which helped the twenty-eight men of the Panfilov Division to refuse to retreat a single step in face of fifty German tanks, to fight them off and die to a man after destroying half of them; the strength that helped the flyer Gastello to direct his flaming machine so that it would crash into an enemy fuel column; that helped Private Matrosov to block the embrasure of a German pillbox with his own body; that helped five Sevastopol sailors, with grenades slung from their belts, to throw themselves under the tracks of the oncoming German monsters and stop them; that helped the eighteen-year-old partisan girl, Zoya Kosmodemyanskaya, after horrible torture and with the hangman's noose round her neck, to shout: "Stalin is with us!"

Such were the people the Germans wanted to destroy!

CHAPTER VII

NO MIRACLE

They came, and their front line cut into Russia like a knife. They tore away part of our native land, like a limb torn from a living body. They threatened to pierce the breast of Moscow; they outraged the Ukraine, our sister republic. They destroyed our native cities, fired our native villages, settled in our homes, made dug-outs in the meadows we loved in our childhood, crushed the Russian birches under their Prussian tanks, and fanned higher the flame of our love for our country.

They rushed inland, their jackboots ruthlessly trampling our wheat fields; they plundered our property, compelled us to flood mines and blow up electric power stations, forced us to evacuate plants far to the rear, and restart them under the greatest difficulties, sometimes in still roofless sheds; thus they aroused us to unexampled efforts of labour.

They broke into our homes, viciously tore up our books, ripped canvases out of their frames, desecrated the graves of Pushkin and Tolstoy, demolished ancient cathedrals, scoffed at everything that is dear to the Russian heart, and stirred up our national pride, aroused our national spirit.

They pounced on us in order to split up our country, to set our peoples against each other, to rekindle the enmity between nations that had been extinguished by the October Revolution; and they made firmer the friendship among us.

They burst in upon our land, broke up families, reduced children to starvation, tortured, maimed and killed our fellow citizens, and thus ignited a furious hatred in our souls.

They brought us endless suffering and endless food for reflection. They made the people recall the history of our nation. They taught our people to feel with every fibre of their hearts, and to think with all the force of their minds. Unwittingly they helped the Russian people to fathom their own nature, to understand the great role Russia was playing in the world. They aroused a whirlwind in the soul of the people, and it came down on their own heads.

* * *

We have a saying: "Russians wait until their blood gets hot." It did get hot. During the first weeks of the war our men, good-hearted Russian fellows, used to thump the German prisoners on the back and give them a smoke. But they soon realized the true state of affairs.

Savage fighting, torment and grief have aroused to fury the Russians' formidable might.

It might have been difficult for this might to manifest itself if we had been few. But we were many: There are a hundred million Russians, and just about as many Ukrainians, Byelorussians, Georgians, Kazakhs and peoples of other nationalities—and all of us are as one.

Such a manifestation might have been difficult if our country had been as backward as it was a quarter of a century ago. But during this time we had become strong. Our tanks and aircraft were better than those of the Germans.

Such a manifestation might have been difficult if we had not had a worthy leader. But we have had such a leader.

Honest and straightforward, he did not feed us with illusions. But he never doubted our ultimate victory. He implemented the might of the people with a clear and firm strategic plan.

There came the difficult autumn of 1941. All through the summer we had retreated. Actually, we had not yet scored a single real military victory, while the Germans recorded one success after another, and were already approaching Moscow.

But our great military leader was well acquainted with the logic of war, and he also knew his people.

* * *

Moscow was caught in giant pincers. . . . How did this come about?

On October 2nd, 1941, the German army, brought to a halt for a time east of Smolensk, began a general advance on Moscow. Hitler stated in an order to his troops: "At last the ground has been laid for a final tremendous blow, which must lead to the destruction of the enemy even before the winter sets in. All preparations, as far as lies within the power of man, have been completed. This time we have proceeded step by step according to plan, so that now the enemy has been forced into a position that will enable us to strike him a mortal blow. To-day marks the beginning of the last big decisive engagement of this year."

After moving up a tremendous quantity of equipment, and accumulating numerical superiority, the Germans broke through our front at Vyazma and pressed on toward Moscow.

The Red Army offered staunch resistance, but was compelled to retreat under pressure of the superior forces of the enemy. Night and day German bombers flew over Moscow. Some branches of the Government moved to Kuibyshev.

But Stalin remained in Moscow. He directed the defence of the city. Tens of thousands of Muscovites, men and women, toiled indefatigably in the autumn mud, in the penetrating cold, under enemy fire, building fortifications or digging anti-tank pits. The eyes of the whole world were riveted on the embattled capital.

They failed to take Moscow on October 12th, the first date set by Hitler. Nor did they take it on the second date fixed: October 25th. The third date, November 7th, passed. Moscow was still Soviet.

The fields in its suburbs were littered with corpses and mangled tanks. By superhuman effort the Germans were stopped on the line Volokolamsk-Mozhaïsk-Narofominsk.

On November 16th, after bringing up new forces, the Germans resumed their offensive. A new order by Hitler announced: "The way is clear for a crushing final blow, which will finish the enemy before the beginning of winter." Again enormous pressure. Again that terrible avalanche of panzers driving on to Moscow. . . .

In those days our units actually did not retreat; there was no place to retreat to. They fought to the last man. In order to take a line, the Germans had to kill everybody defending it.

Hitler had mustered a tremendous force against Moscow—51 divisions, 13 of which were panzers—more than he used against all France in 1940. This time he decided to take the capital by an out-flanking movement rather than by a frontal attack. Six army corps and two tank divisions launched an auxiliary attack against the centre, in the district of Istra, Zvenigorod and Narofominsk. But the main forces forged ahead north and south of Moscow, working their way around the capital.

South of Moscow, Guderian's Second Panzer Army was in the field. It breached our front at Bogoroditsk, by-passed Tula, which stubbornly defended itself, took Stalinogorsk, Venev and Mikhailov and approached to within thirty-two miles of Kolomna, twenty-two miles of Ryazan and three miles of Kashira.

To the north of Moscow, Generals Hoth and Hübner had deployed their Third and Fourth Panzer Groups. By a powerful thrust these troops took Klin and Solnechnogorsk, cut the Moscow-Leningrad railway, took Yakhroma and reached the Moscow meridian. At Dimitrov part of these forces succeeded in crossing the Moscow-Volga canal. On the highway running from Leningrad to Moscow, the Germans reached the village of Kryukovo. Small tank groups worked their way still closer to Moscow, reaching Skhodnya. It was now some eighteen miles to the city, or even less—a distance the tanks could cover in half an hour.

The jaws of the pincers were closing, pressing south and north. The German Information Bureau proclaimed: "The German offensive against the capital of the Bolsheviks has advanced so far that the inner section of the City of Moscow can already be seen with the aid of good field glasses."

Simultaneously the situation deteriorated also on several other important sectors of the front. The Germans took Rostov, in order to open the way to the Northern Caucasus; the Germans took Tikhvin, in order to complete the encirclement of Leningrad and open the way

to a junction with the Finns; the Germans took Yelets, in order to open the way to Voronezh and the upper reaches of the Don. . . .

At this critical juncture, when it seemed that our position could not possibly be worse than it was, the tide of battle was turned.

No, it was not a miracle, not the reflex of self-preservation, not the ardour of despair! It was a carefully calculated and long-thought-out manœuvre, which opened the floodgates of our hatred and strength: a comprehension of the logic of war and a mustering of the might of the people. It was an inspired choice of the right moment, when the operational power of the Germans was exhausted and the ferocity of the Russians at its peak.

* * *

The German military machine, the most powerful in the world at the inception of the war, was built on an inadequate foundation. This circumstance necessitated the doctrine of the *Blitzkrieg*, which proved its worth in the destruction of weak countries tackled one by one. The enemy tried to apply this same doctrine to the war against the U.S.S.R., not only because success had turned the heads of the Hitlerites, but also because economically Germany would find it difficult to wage a protracted war.

This doctrine likewise determined (a) the structure of the *Wehrmacht*, powerful tank units and aviation and a comparatively weak infantry and artillery; (b) The German strategy of attacks by massed mechanized groups with the aim of cutting up the front into small sectors; (c) the time limit fixed for the end of the campaign, three weeks to Moscow. To Hitler it all seemed very simple. He imagined that his motors would eat up the road across the broad expanses of Russia and that the country would immediately fall to pieces, broken by blows from without and debility within.

But the Soviet land and its people proved to be stronger than German steel; more penetrating political minds had suspected this much earlier.

Stalin was pursuing a policy of active defence: the Red Army, though retreating before the volume of German equipment, defended itself fiercely, growing stronger in battle, gnawing off or weakening German salients, and inflicting irreplaceable losses in manpower, planes and tanks. The German advance slowed down; the advantage derived from the unexpectedness of the attack was spent; the front gradually became stabilized; the offensive arms of the *Wehrmacht*, the panzers and the *Luftwaffe*, could not now be used to the best

advantage; the German infantry and artillery, now no longer merely moving along a path blasted for them by their tanks, but compelled to fight, proved weaker than the corresponding Soviet arms; the supplying of the front became increasingly difficult; the German rear was dislocated by guerrillas engaged in strategic demolition. And in addition to all this, the gigantic Anglo-Soviet-American fighting alliance hung like an ominous shadow over Hitler Germany.

The Germans knew what it would mean for them definitely to lose the *blitz* in the *krieg*; hence they sought to win it by their furious all-out attacks of October 2nd and November 16th. But their attacks fizzled out; they had overtaxed their strength.

Our wise leader saw the blood and torment of the people. To save them he waited five months before he struck, meanwhile wearing down the enemy and preparing his own forces. The arch-adventurer in Berlin was sending whole generations of Germans to their death. For five months he squandered men and equipment, chasing after victory like a dog chasing his tail.

Hitler was caught on the rebound.

* * *

The hour struck, and the Russian hurricane swept down upon the enemy. The Red Army delivered blow after blow, bringing the Germans to the brink of catastrophe.

General von Kleist's First Panzer Army, whose string of victories in France and in the Balkans had won it the name of "invincible," was moving over the open steppe, along the coast of the Azov Sea, toward Rostov. Von Kleist had half a thousand tanks—three or four times the number possessed by the opposing Soviet troops.

Recklessly rushing towards the goal, the German left flank was stretched out too far and was weakened. Noticing this, the Soviet command, after a veiled concentration of shock troops in this district, executed a flanking movement and on November 17th, 1941, unexpectedly struck at the Germans from the north. After several days of fierce fighting von Kleist's army was crushed and Rostov, which had in the meantime been taken by the Germans' right flank, was freed.

This was the first great offensive operation of the Red Army in the present war.

Routed by inferior numbers, the enemy fled in panic to avoid complete encirclement. The Germans hardly had time to leave instructions to their rearguard troops in the form of signposts reading:

"Road of Retreat to Mariupol." More than half of his soldiers and tanks had to be written off by von Kleist.

The world learned that the Russians could not only resist, but also attack. But this was only the beginning.

* * *

As early as the summer of 1941 the Germans had advanced to the immediate vicinity of Leningrad, intending to take the city by a frontal attack. The attack was heroically repulsed, and from the second half of September this front was stabilized. The Germans dug themselves in, surrounding the city on almost all sides. But they did not succeed in joining forces with the Finnish army. An open gap remained, the route across Lake Ladoga. In order to close this gap and effect a junction with the Finns in the region of the lake, General Schmidt late in the autumn of 1941 launched an attack on Tikhvin, almost 125 miles south-east of Leningrad, capturing it at the end of November.

Having worn down the enemy's forces in previous battles, the Red Army started an offensive in this region and broke through to Tikhvin from the north, east and south, almost completely surrounding it. On December 9th, after a stubborn night engagement, it succeeded in freeing the city. Three of Schmidt's divisions were completely routed, the survivors fleeing to the forests in peasant clothes.

Rostov and Tikhvin. Again and again the "invincible" Germans were whipped. The turning-point had been reached; the initiative passed into our hands.

Perhaps these were secondary operations. For the German Information Bureau stated at the beginning of December: "The German Command will consider Moscow its main objective even if Stalin should attempt to transfer his main military operations to some other theatre." Very well, then; we shall give it to you at Moscow!

* * *

The thunder of guns could already be heard in the suburbs of Moscow. . . . But in the Kremlin Stalin continued the execution of his plan, firm and unfaltering.

Encountering adamant resistance at the centre, the Germans continued their outflanking movement, closing in on Moscow in the form of a horseshoe. Thus they stretched out the line of their front, for an arc is longer than a straight line. The lengthened

communications weakened them. Spread out over greater distance than before, the penetrative power of the German army, worn down by previous battles, was now still further diminished.

During all this time, trainload upon trainload of fresh, well-trained and well-armed troops kept pouring in a continual flow into the region of Moscow from the interior of the country. Thanks to Stalin's husbanding of our forces, these new troops had not been squandered piecemeal in previous actions, despite the urgency of the situation. Having received the order "Not a step back," the units already in the field stood fast and self-sacrificingly bore the entire brunt of the German assault. And they held.

Then the hour struck.

* * *

It was December 6th when the Russians delivered their blow. They struck simultaneously on both flanks, at the two ends of the horseshoe, the points of the giant pincers.

The southern spearhead of the German army had been weakened even before the general advance of the Red Army. Guderian's picked troops had not been able to take Tula, and that city, though almost completely surrounded, was harassing their rear. In addition to this, as the Germans were approaching Kashira in their advance toward Moscow from the south, they were suddenly counter-attacked by a Soviet cavalry corps, an operation which proved highly successful and split the Germans' southern salient into two parts. When, on December 6th, the Red Army launched its general attack, these two parts of Guderian's grouping were dealt with separately and smashed. The Soviet troops retook Mikhailov, Venev, and Stalinogorsk, broke down the ring round Tula and drove the Germans west to Kaluga. Shortly afterwards Kaluga was also taken.

Guderian suffered complete defeat. The celebrated theoretician of tank warfare fled ingloriously, losing thousands of soldiers and hundreds of machines.

The northern spearhead of the German army had also been weakened before the Russian general offensive by stubborn fighting on the sector between the Leningrad railway and the Moscow-Volga canal. Here battles were fought for Kryukovo, Krasnaya Polyana and for the banks of the frozen canal, with heavy losses to both sides. Many villages changed hands five times.

The Germans could not withstand the general onslaught of the Soviet troops, and in the course of a few days were compelled to yield Yakhroma, Rogachevo and Solnechnogorsk. These points were

strongly fortified, and were recovered by the Red Army only after they had been surrounded and repeatedly attacked by night.

The Germans still made desperate efforts to hold on to Klin, but when Klin was also taken after a fierce night engagement, the Germans threw up everything and sought safety in flight. They tried to rally at Volokolamsk, further west, but Volokolamsk, too, shortly succumbed to superior Soviet strategy.

Nor was the German centre spared. Here, too, the Soviet troops threw back the enemy, freeing Istra, Narofominsk and Mozhaik.

The Germans were in retreat along the entire front.

* * *

All the fury of the Russians broke loose. The Red Army pursued and harassed the fleeing enemy with unflagging energy. They dashed ahead, spurning rest and sleep. The joy of victory and thirst for revenge bore them on and increased their strength. *

The routed Nazis fled to the west. They hid in attics, chimneys and haylofts. The road of retreat was cluttered up with abandoned armament. German tanks, some crippled, others undamaged, stood immobile in the snow. The sides of the roads were jammed with long files of discarded automobiles. From snowdrifts protruded the muzzles of big guns. And everywhere there were piles of sprawling corpses. During the first four days of the Soviet offensive the Germans lost 700 tanks and 5,000 automobiles. In three weeks of fighting around Moscow, approximately 100,000 Germans were killed. And the pursuit still continued.

It was not a non-stop retreat all along the line. The Germans tried to stem the Soviet advance at points suitable for defence. They turned villages and towns into powerful centres of resistance, fortified high river banks and mined roads, but were dislodged again and again and driven still further back. In their irresistible drive, the Red Army stormed one Nazi position after another, freed one Soviet city after another. The liberated population greeted the Red Army men with tears of joy. And the pursuit still continued.

At this point, the severe winter began to plague the Germans. Deep snow hampered the movements of tanks, the backbone of the German army. The rout of the Germans at Moscow began when it was still comparatively warm, about 30 deg. F., just below freezing point. By the end of December the cold had driven the mercury down to — 22 deg. F. and even farther. Being without warm clothing, the

Germans suffered greatly. The Red Army men, on the contrary, were amply protected by sheepskin coats and padded jackets, warm hats and felt boots. Again, the Soviet troops included many Siberians, who were accustomed to icy weather. So the pursuit still continued.

South-west of Moscow the advancing Red Army took back Sukhinichi and Yukhnov and reached a point due south of Smolensk. North-west of Moscow the Soviet troops took Kalinin (Tver), Staritsa and Selizharovo, cut the railway line to Rzhev, and reached the Smolensk meridian. On these sectors the Red Army in four months battled its way westwards for more than 250 miles. The horseshoe was turned over and fell with its ends pointing westwards. The Russians had gained the upper hand over the Germans.

Every factor told: loyalty to country, love of freedom, spiritual reserves, the tradition of centuries of struggle, latent dignity now become apparent, and inner strength. It was an impetuous upsurge; it was "the Russian Glory!"

* * *

Hitlerite Germany was on the verge of catastrophe. But the day of its doom had not yet arrived.

The Red Army offensive lost impetus. As it slowed down, the Germans had more time to build fortifications. The Germans showed exceptional doggedness in their defence. Moreover, winter now turned against us, for our communications were considerably lengthened and buried deep under snow.

Germany was on the verge of collapse, and if she had been dealt a blow from the West, simultaneously with our blow from the East, Hitler's fate would have been sealed! But we were fighting alone, and Hitler pulled through.

The rout of the Germans near Moscow did not lead to a German debacle, but in many ways it helped to decide the final issue of the war. We had frustrated the German plan of shattering the U.S.S.R. in a lightning campaign and then hurling their entire forces against the British and Americans. Thus, our Allies gained time to build up their armaments, precious time bought with the blood and courage of the Russians.

* * *

1942. This was the spring so eagerly awaited by Hitler. Apparently fate had given him an opportunity to retrieve his fortunes.

He was given the time he craved to finish off the U.S.S.R. and free his hands for the West. He compelled all the enslaved peoples of Europe to forge him arms and replenish his manpower. He levied all he could, in Germany as well as in his vassal states. He was still going strong.

In the summer of 1942 the Germans broke through our lines in the south-west. The absence of a Second Front permitted Germany to hurl at Russia double the number of troops she did in World War I, when she had to fight on two fronts. We could not hold back this tremendous concentrated onslaught. The Germans occupied the Kuban and the Don regions, and reached the Caucasus and the lower reaches of the Volga. The Volga is the "axis of Russia." Their plan was to draw our forces south, drive north along the Volga and take Moscow from the rear. In order to defeat the U.S.S.R. before winter, Hitler again decided to decapitate the country by taking Moscow.

But the road of the Germans to Moscow was blocked by Stalingrad, which bore the main brunt of the Nazi attack.

The months of the storming of Stalingrad were an age of glory in the history of Russia. It was not a fort, but simply a city, cut off from railway lines, pressed against the river. How was Stalingrad to hold out? By force of arms? Yes, but above all, by the moral strength of a great people.

The City of Stalin did hold out, saving Moscow, the country, and the world.

And here again occurred what many have deemed a miracle. On November 19th, 1942, the Red Army near Stalingrad suddenly assumed the offensive against the picked German army of von Paulus, surrounded it and destroyed it. The Russians had remained Russians.

This was the turning-point of the war.

The Red Army gathered strength in battle, perfected its military knowledge and steeled its personnel. It was receiving more and more arms and equipment from the rear. The fighting collaboration between the Red Army and the armies of the allied democratic powers grew stronger.

The Red Army drove the Germans from the Volga, the Caucasus and the Don.

In the summer of 1943, near Kursk, Hitler made yet another attempt to breach our front, intending to strike at Moscow from the south. He concentrated every available ounce of military energy at this one point, but in vain: the advance was quickly repulsed, and

the Germans were again driven west. Resisting fiercely, the Germans clung desperately to the banks of the Dnieper, but were shortly dislodged from that river too.

Inspired, and determined on vengeance, Russia continued to drive the invaders from her soil and to liberate half of Europe.

THE END

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